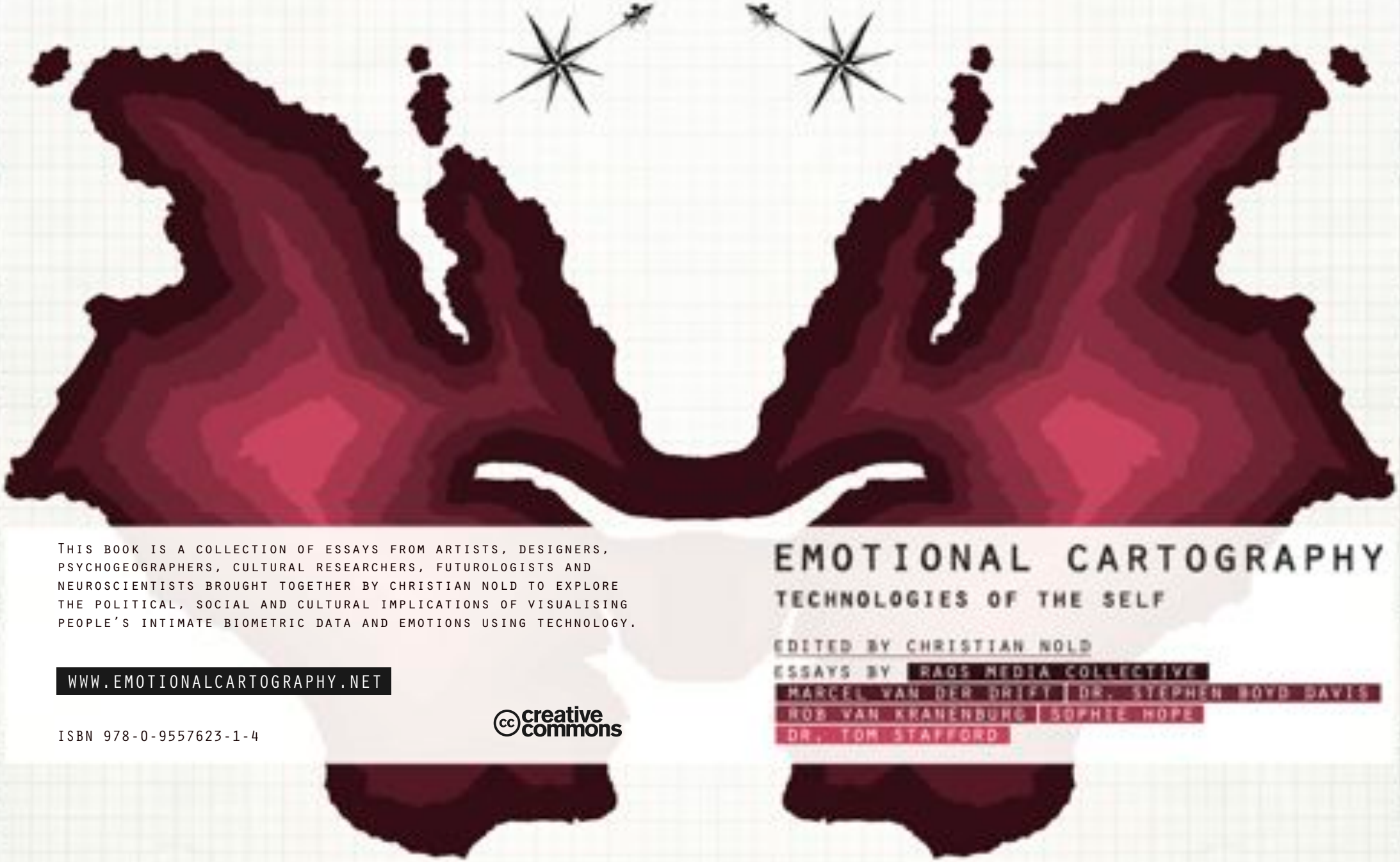

EMOTIONAL CARTOGRAPHY

TECHNOLOGIES OF THE SELF

EDITED BY CHRISTIAN NOLD

ESSAYS BY RAQS MEDIA COLLECTIVE
MARCEL VAN DER DRIFT · DR. STEPHEN BOYD DAVIS
ROB VAN KRANENBURG · SOPHIE HOPE
DR. TOM STAFFORD

This book is a collection of essays from artists, designers, psychogeographers, cultural researchers, futurologists and neuroscientists brought together by Christian Nold to explore the political, social and cultural implications of visualising people's intimate biometric data and emotions using technology.

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EDITED BY CHRISTIAN NOLD
WWW.SOFTHOOK.COM

DESIGNED BY DANIELA BORASCHI
WWW.DANIELABORASCHI.COM

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CONTENTS

The Bio Mapping device: GPS – left, fingercuffs – top and data logger on the right.

INTRODUCTION:

EMOTIONAL CARTOGRAPHY

TECHNOLOGIES OF THE SELF

Christian Nold

This book is a collection of essays from artists, psychogeographers, designers, cultural researchers, futurologists and neuroscientists, brought together to explore the political, social and cultural implications of visualising people's intimate biometric data and emotions using technology. The book is the outcome of a research process which aimed to reach a deeper understanding of a project called 'Bio Mapping', which since 2004, has involved thousands of participants in over 16 different countries. Bio Mapping emerged as a critical reaction towards the currently dominant concept of pervasive technology, which aims for computer 'intelligence' to be integrated everywhere, including our everyday lives and even bodies. The Bio Mapping project investigates the implications of creating technologies that can record, visualise and share with each other our intimate body-states.

To practically explore this subject, I invented and built the Bio Mapping device, which is a portable and wearable tool recording data from two technologies: a simple biometric sensor measuring Galvanic Skin Response and a Global Positioning System (GPS). The bio-sensor, which is based on a lie-detector, measures changes in the sweat level of the wearers' fingers. The assumption is that these changes are an indication of 'emotional' intensity. The GPS part of the device also allows us to record the geographical location of the wearer anywhere in the world and pinpoint

where that person is when these 'emotional' changes occur. This data can then be visualised in geographical mapping software such as Google Earth. The result is that the wearer's journey becomes viewable as a visual track on a map, whose height indicates the level of physiological arousal at that particular moment. The Bio Mapping tool is therefore a unique device linking together the personal and intimate with the outer space of satellites orbiting around the Earth. The device appears to offer the colossal possibility of being able to record a person's emotional state anywhere in the world, in the form of an 'Emotional Map'.

People who actually wore the device and tried it out while going for a walk and then saw their own personal emotion map visualised afterwards, were baffled and amazed. But their positive reactions hardly compared to the huge global newspaper and TV network attention that followed the launch of the project. People approached me with a bewildering array of commercial applications: estate agents in California wanting an insight into the geographical distribution of desire; car companies wanting to look at drivers' stress, doctors trying to re-design their medical offices, as well as advertising agencies wanting to emotionally re-brand whole cities. Other emails arrived from academic sociologists, geographers, futurologists, economists, artists, architects and many urban planners, trying to get new mental insights into their own disciplines. Surprisingly, there were also intensely personal emails from people who wanted to understand their own body and mind in more detail, asking for a therapeutic device to monitor their daily anxiety levels.

I was shocked: my device, or more correctly, the idea or fantasy of my device had struck a particular 21st century zeitgeist. A huge range of people had imagined ways of applying the concept, some of which I felt uncomfortable about. I realised that 'Mapping Emotions' had become a meme that was not mine anymore, but one that I had merely borrowed temporarily from the global unconscious. Faced with some dramatic choices, I decided to try to establish and document my own vision of emotion mapping as a reflexive and participatory methodology.

FROM DEVICE TO METHODOLOGY

From talking with people who tried out the device, I was struck by their detailed and personal interpretations of their bio-data. Often we would sit next to each other and look at their track together. While I would see just a fairly random spiky trail, they saw an intimate document of their journey, and recounted events which encompassed the full breadth of life: precarious traffic crossings, encounters with friends, meeting people they fancied, or the nervousness of walking past the house of an ex-partner. Sometimes people who walked along the same path would have spikes at different points, with one commenting on the smells of rotting ships, while another being distracted by the CCTV cameras. People were using the Emotion Map as an embodied memory-trigger for recounting events that were personally significant for them. Sometimes these descriptions overlapped, while at other times they were unique. For them, the spikes were documenting not what we would commonly call 'emotion', but actually a variety of different sensations in relation to the external environment such as awareness, sensory perception and surprise. I suddenly saw the importance of people interpreting their own raw bio-data for themselves.

Bio Mapping functions as a total inversion of the lie-detector, which supposes that the body tells the truth, while we lie with our spoken words. With Bio Mapping, people's interpretation and public discussion of their own data becomes the true and meaningful record of their experience. Talking about their body data in this way, they are generating a new type of knowledge combining 'objective' biometric data and geographical position, with the 'subjective story' as a new kind of psychogeography.

Participants often describe the sensation of using the Bio Mapping tool as a kind of Reality TV show, where they can see their own life documented in front of them. Such a description suggests something similar to Berthold Brecht's notion of '*Verfremdung*' (de-familiarisation). Brecht's idea is that this performative distancing allows the viewer to take a critical

distance on viewed events. In the case of Bio Mapping, the participants are vocalising their intimate internal mental life as well as public behaviour to a communal group. In effect, the participants are carrying out a type of co-storytelling with the technology, that allows them to creatively disclose, or omit, as much as they like of what happened during their walks.
The Bio Mapping tool therefore acts as 'performative technology' which shoulders the burden of having to hold the public's attention, while offering a safe distance from public exposure to the 'interpreter'. Used in this way, the tool allows people who have never met each other to tell elaborate descriptions of their own experiences, as well their opinions on the local neighbourhood, in a way that they would have never done otherwise.

This vision of Bio Mapping as a performative tool which mediates relationships is very different to the fantasy of Emotion Mapping that many people approached me about: such as marketeers' intentions to metaphorically 'slice people's heads open to see their innermost feelings and desires'.

With the passing of the time, I started to realise that both the particular context and ways in which a biometric sensor is used drammatically affects the social relationships that are formed, as well as the types of observations that people make during the workshop.

The early Bio Mapping workshops had all taken place in art galleries in the centres of towns and cities. People often walked randomly for 30 minutes before returning to the exhibition to see their emotion maps. In such context, the kind of descriptions and annotations that people left were mainly anecdotal: drank a coke here, had an ice cream there, was spooked by pigeons etc.

Once I started to work with local community organisations for longer periods of time and in less central towns areas, where people lived in and cared about (and not just worked or shopped), the annotations changed dramatically. Instead of being just about their momentary sensations in the space, participants told stories that intermingled their lives with the place, local history and politics. The discussions often followed a trajectory of

noticing the bodily effect of car traffic on one person's emotion map, often leading to discussing the lack of public space and identifying its social and poltical causes. This process of scaling-up and seeking connections between issues encouraged people to talk both personally and politically in a way they had often not done before with other local people.

At the end of each Bio Mapping workshops project, all the information and data gathered were designed into a printed map, which was then distributed for free in the locality. For example, in the Greenwich Emotion Map, this meant using a GIS (Geographical Information Systems) software to create a communal arousal surface which blended together 80 people's arousal data and annotations. The resulting communal 'emotion surface' is a conceptual challenge and question. Can we really blend together our emotions and experiences to construct a totally shared vision of place?

INTRODUCTION TO THE ESSAYS

The theme of this collection of essays is to investigate the apparent desire for technologies of Emotion Mapping, using a variety of different approaches. In addition to the essays, interspersed throughout the book, are the images of the printed Emotion Maps as well as photos of the participatory process. The aim being that this combination of practice and theory will allow us to imagine the social, economic, cultural and political implications of creating a public Emotional Cartography.

Looming heavily over the idea of being able to see what people think and feel, is the spectre of social and mind control. The text *'Machines made to Measure'* by the Raqs Media Collective examines a history of biometric technologies as tools of state control, that rewrite our notions of self. For them, mapping the body is *"the first step in its governance, and in the subjugation of its boundaries to regulation and control"*. Their essay highlights an important duality in the way biometric technologies are used.

The first tends towards an aggregation of people's bio-data and a search for communal averages and patterns as in anthropometrics or racial profiling. The second attempts to identify and track the unique individual via technologies such as fingerprinting. Raqs do suggest that people posses a natural 'left-hand' knowledge that allows them to structure new identities:

"What the technologies of identification do not take into account, however, is the ability of a person to enact different iterations of the self... a hyperlinking of aspects of being - an expanding and cross referencing matrix of acts, attributes and attitudes that constitute the database of a person's 'becoming' over time".

This concept of a personal database of our own future possibilities is an alluring alternative vision for technology that resonates with Bio Mapping and runs counter to the way biometric technologies are currently being thought about.

Marcel van der Drift, in the text *'A Future Love Story'* extends this vision towards a not too distant future, where mobile phones sense and log our emotional state, sending the information to other people's phones. In this world, 'self-reflection' on ones emotional behaviour is almost universally enforced by a mixture of technology, design and social peer pressure. The central question that emerges from the story is a question of choice. Who will interpret all these huge amounts of body/emotion data? Will it be interpretation software, other people's reactions or our conscious mind? The chocolate box ending of the story suggests a willing rejection of technology in favour of pure and unmediated human experience. Nevertheless, in my mind, the uncomfortable suspicion arises that, once introduced, people may not be allowed to or actually want to live without these gadgets.

'Mapping the Unseen' by Dr. Stephen Boyd Davis examines a history of maps that emphasise the interpretative and subjective aspects of mapmaking. His approach suggests that while we may not be aware of it, we are already used to working with psychogeographical maps. Boyd Davis

suggests that this drive towards the subjective image leads to interactive technical systems. His articulation of an 'Egocentric Subjectivity', where the individual user is in total charge of generating his own map of the surrounding world, is a succinct summary of the current paradigm of technology design. For Boyd Davis, rather than self-reflection, biometric data enables reflection-in-action, which suggest a human-machine feedback loop of people integrating with technical systems. In this technophilic vision of individualistic interactivity, how can we imagine shared social space emerging where people develop new social relations?

In *'Blanqui's Parade'*, Rob van Kranenburg offers a complex allegory for the multiplicity of a social space where different groups of people can be simultaneously carrying out divergent agendas. His text suggests the importance and power of subtlety, ambiguity and subterfuge in communal social behaviour. For a keen observer, small perceptual shifts can suddenly and dramatically alter our experience of an event and our own role within that.

The essay *'Socially Engaged Art'* by Sophie Hope moves the focus away from a purely theoretical speculation, to look at an applied example of the Bio Mapping project being used by a local community in Greenwich, London. To understand the project, Sophie unpacks the complicated political contexts that this participatory art project operates within. She analyses the project by establishing categories of participatory tactics that artists have evolved in order to try and break through paternalistic and top-down relationships with local audiences. Sophie identifies Bio Mapping as adopting a deliberately schizophrenic tactic of (F)utility, that tantalises with easy disclosure while offering dynamic complexity. Her articulation of (F)utility suggests a constructively agonistic tactic that challenges the full range of participants and stakeholders involved in socially engaged art project.

Tom Stafford's concluding essay *'Hacking Our Tools for Thought'* offers us a vision of the mind as flexible and naturally tool-using. Starting from the example of a patient who has lost his long-term memory, Stafford

articulates a perspective of the modular brain that can have parts removed and still manage to function, and an ‘extended mind’, which can have parts added integrate them into the flow of thought. Stafford proposes that the mind can have the Bio Mapping component added to enhance communal self reflection and turn us into social cyborgs. He rejects the egocentric individualistic notion of the mind and proposes Bio Mapping as a vision of future social tools that can empower us to move away from the individual brain towards communal mind hacks and a radical rethinking of ‘self’.

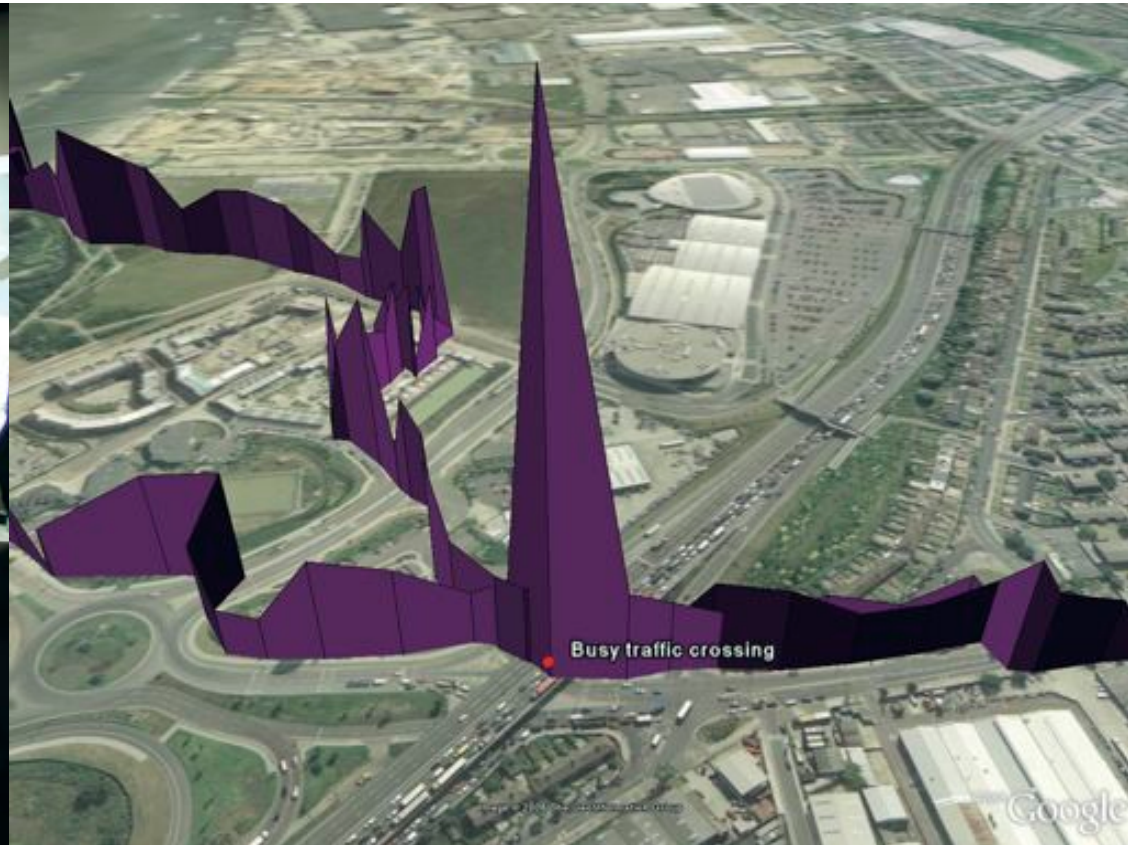
As a conclusion, it comes natural to ask and reflect on what will be the future of Emotional Cartography. Will it become mind control, mobile phones, interactive maps, revolution, public consultation or brain augmentation? But, perhaps, the most important aspect of Emotional Cartography is the way in which it creates a tangible vision of places as a dense multiplicity of personal sensations, which we are not normally aware of. The complexity and diversity of these experiences presents a fundamental challenge to all our formal notions of representational politics. Furthermore, the bottom–up process of identifying communal matters of concern, starting from personal sensations, suggests the possibility of an alternative body politic of place.

ABOUT THE EDITOR

Christian Nold is an artist, designer and educator who works with people to create new models for communal representation. In 2001 he wrote the book Mobile Vulgus, which examined the history of the political crowd and which set the direction for his research into participatory mapping. Since graduating from the Royal College of Art in 2004, he has taught and lectured extensively whilst running large scale research projects across the world.

Two participants from an early Bio Mapping workshop and exhibition, at the Angel Row Gallery in Nottingham in 2005.

Communal workshop at Independent Photography for the Greenwich Emotion Map 2005 – 2006.



Typical visulisation of Bio Mapping data shown in Google Earth. The height of the track indicates the physiological arousal at that point. The annotation was made by the participant.

A modern lie detector, combining sensors for breathing rate across the chest, blood pressure on the arm and galvanic skin response on the fingers.

MACHINES MADE TO MEASURE: ON THE TECHNOLOGY OF IDENTITY AND THE MANUFACTURE OF DIFFERENCE

RAQS MEDIA COLLECTIVE

Editor's Note: *this text is an extract from the essay 'Machines Made to Measure: On the Technology of Identity and the Manufacture of Difference', published in Sarai Reader 04, (2004) and Leonardo Electronic Almanac, Volume 11, number 11, November 2003. Due to brevity, the section titled 'Identity and Difference' has been ommited from this version of the text but can be viewed in full on the Sarai website.*

"...We may classify human beings and human features but cannot bring about or find a precise agreement between any two; we have white men, red men and yellow men; we have well ascertained and defined types of humanity; we have in each type classifications of hair, eyes, noses, mouths and so on; but we have a large residue of difference between any two individuals and so on; but a large residue of difference between any two individuals remains as it were a recurring decimal which cannot be distinguished; the difference between each human face and every other of its species. Upon which evidence of identity has been always so firmly rested can be easily observed, but it cannot be specifically and completely isolated. We know that it is there, but we cannot in any case completely define the details. But in the case of finger impressions, there is no question of dealing with those evanescent expressions which so largely contribute towards recognition of the identity of the human face. The exact differences in such impressions may be pointed out with as much certainty as the differences between the maps of two countries..." [**1**].

BODIES AND MAPS

Images of human beings construct a map of the world. Even the judgement in a criminal case has to rely on the metaphor of the difference between the maps of two countries when talking about the difference between two impressions of the ridges and whorls at the fingertips of two human beings. As if the body were a territory, and its features possible to render as lines, ridges and whorls on a map. As if the body were a territory, the mapping of which would be the first step in its governance, and in the subjugation of its boundaries to regulation and control. Images of human beings, like maps of the world, locate like and unlike, near and far, familiar and strange. These categories, which are premised in the sense of what we see as being similar or different to who we are, or where we stand – on our sense of orientation. It is through these that power creates the binaries needed to inscribe in our minds it's map of the world.

When this happens, images of the body (or of clusters of bodies) can become weapons of offence, and the instruments of a siege. They can be used to maim or injure, or imprison. No war or skirmish (local or global) is fought without it's own arsenal of images. Images are endowed with the ability to create proximities and distances that can impel or sanitize acts of violence. Consider the aerial photograph used to identify targets for bombardment in cities, or the identikit photograph of the 'Wanted' person that often sticks to the walls of cities. Both kinds of images carry with them the charge of an anticipated act of violence, a bombing, an imprisonment, perhaps an execution. Both act as indexes, as maps, as locators of targets, and as the means to zero in on them. They are both navigation aids for missiles in the mind, and the radar that locates the enemy for the eye.

Consider the image of the typical 'other', the one who renders a distance between anyone we say is like 'us' and anyone we are accustomed to thinking of as unlike us. At its barest, it is a measurement of the distance – between us, and those we are mobilized to think of as being different, or exotic, or banal, or inferior, or superior, subhuman, or

superhuman in relation to us. At its barest, this is what the issue of identity and difference are about.

THE MEASURE OF MAN

In a photograph taken in the year 1876, forty-six men, women and children, aboriginal inhabitants of the Andaman Islands (an archipelago off the south east coast of India), are portrayed arrayed about a single measuring rod. The rod, at the very centre of the image, stands in relation to the people about it as a scale would to features on a map, or a silhouetted, stylized human figure would to an architects drawing of a building. Perhaps, more crucially, the rod can be read as an indexical allegory, or as a barely concealed code inscribed into the image that ironically points to an imputed and immeasurable distance that separates the photographed from the photographer, or, man from his measure [**2**].

The photograph, titled simply and prosaically, as *"Andamanese Group with Measuring Rod"*, is one of a series of images taken by Ernest Horace Man, as part of his project to study Andamanese aboriginals, then considered to be a 'pure' primitive race in serious danger of extinction. E.H. Man's copious photographic record paved the way for an intense process of the scrutiny of the bodies of living and dead Andamanese (which lasted through to the early years of the twentieth century, and which continues, somewhat erratically till today). They were photographed against anthropometric grids, clothed as well as naked, their skulls were measured with calipers, and their nostrils, ears, eye sockets, buttocks and hair were measured and tabulated on cross indexed tables. The photographs, which were circulated as ethnographic studies, images in travelogues, items in popular encyclopaedias and museum catalogues, illustrations in missionary literature and as pornographic curiosities, continued to have a career well into the late twentieth century.

The measurements and images harvested from the Andamanese

were worked on to compute statistical averages – means and medians that could then express the idea of what an 'average' Andamanese might be.

This in turn could then be taken to express the 'identity' of the Andamanese, a figure that could substitute a mathematical metaphor for the inconvenient tendency of the individual human body to exhibit variation. The figure of the measure of the 'average' Andamanese (expressed through calculations, or through photographic composites) was then something that could be compared to other 'averages' to create clusters of information about niches within the social spectrum. Photographic composites of Andamanese skulls, for instance, were mapped on to composites consisting of the images of the skulls of Irish indigents, prostitutes, convicts and the criminal insane. Finally, there were more photographs and measurements than there were people. The Andamanese became more data and less a living community of human beings. It could be said that the technology that indexed their 'identity' and hence their 'difference' to those who did the indexing also measured out the terms of their subtraction from life, until they remained only as the ghostly prisoners of photographic negatives in the collections of anthropological museums and archives. The measure of man in the end became a calculus of cadavers – a detail in the arithmetic of violence of the nineteenth century.

THE SMEAR OF TRUTH

If Anthropometry sought to compute an average that flattened differences in the name of a composite image of an identity, then Fingerprinting, another way of reading the body for signs of identity, sought to locate and fix the individual as a unique and unvarying entity [**3**]. Nineteenth century India, which was one of the greatest anthropometric field laboratories in the world, was also the prime experimental site for the development of technologies for registering and interpreting fingerprints, and the rise of fingerprinting as a precise forensic science. From the pioneering usage of

fingerprints as identity markers in land records in the village of Jangipur in the Maldah district of Bengal by James William Herschel in 1858, to Francis Galton's enthusiastic 'anthropometric' endorsements of Herschel's experiments, to the systematization of forensic fingerprinting (along with 'Bertillonage' or anthropometric measurements after the manner of Alphonse Bertillon) by Sir Edward Henry, Azizul Haque and Hem Chandra Bose of the Bengal Police in 1897, created a rich body of knowledge about the principles that animated technologies of identification. In a sense, the techniques of ruling through information that were perfected in the colonies, were then exported to the metropoles, and thereafter became generalized as the standard technologies for the affixture of identity and the recognition of difference that we have come to know today on a global scale. Had the early experiments with anthropometric image-making not been undertaken in remote parts of the world, or the intense desire to read the smears of fingertips as markers of truth not taken root in the minds of colonial administrators in rural Bengal, the techniques of biometric identification and surveillance that we have become familiar with in recent years all over the world would not have had such a smooth and untrammelled career as the necessary exigencies of power, articulated as knowledge in and about bodies, read as maps, and subjugated as conquered territories.

It is important to understand that this anxiety to produce certainties about identity emerged from a deep cognitive gulf that separated power from its objects in colonial Bengal. To the rulers of the day, the 'natives' they governed, were infamously disingenuous. Their 'un-veracity' and the desire to confuse those who ruled them was a matter of great concern to administrators, judges, prison authorities and even to those assigned with the tasks of collecting taxes and revenue. Thomas Babington Macaulay once famously remarked, with some exasperation and considerable rhetorical flourish: *"What horns are to the buffalo, what the paw is to the tiger, what the sting is to the bee, what beauty, according to old Greek song, is to woman, deceit is to the Bengalee. Large promises, smooth*

excuses, elaborate tissues of circumstantial falsehood, chicanery, perjury, forgery, are the weapons, offensive and defensive, of the inhabitants of the lower Ganges…".

It was against these weapons, this modest arsenal (deceit, circumstantial falsehood, chicanery, perjury, forgery) of everyday insurgencies in the offices, courts and corridors of power that the emergent colonial state invested into the development of an armoury for ascertaining identities and recognizing differences. That this project of ascertaining who was 'what' took place at the broadly anthropological level (as in the case of the Andamanese, and many other ethnic groups spread across the South Asian landmass) as well as the microscopically forensic level (as in the case of the Bengali peasant) tells us about the scope and pervasiveness of this anxiety.

THE INEXTINGUISHABLE RECURRING DECIMAL

It is difficult to imagine why or when and under which circumstances one would like to yield a complete transparency about oneself to the scrutinizing apparatus of power. However, the increasingly fraught operation of power in society requires the harnessing of exponentially amplified means of visualizing us as transparent vessels of bodies of data. This means that the slightest shadow, the smallest reticence or hesitation in yielding the substance of our selves, and the iteration of our selves through actions, encounters and interactions with others, is liable in many places today to be read as 'deceit, circumstantial falsehood, chicanery, perjury and forgery'. This is the means by which the true test of citizenship is not a level of commitment to and participation in the polis, but the degree to which the subject is prepared to make him or herself known to the state. This votive offering of knowledge about ourselves to the guardians in power then guarantees us a place in the polis, and a certainty that we are what the state says we are, and distinct from those aliens that it seeks to protect us from.

In an early book of the Mahabharata, one of the great epics in the Indic tradition, Ekalavya, an aboriginal teenager, is found copying and practicing the education being imparted to the Aryan warrior princes, the Pandavas, the protagonists of the narrative. Their teacher and guardian, who is concerned that Ekalavya has greater mastery over the art of archery than his favourite pupil – the Pandava prince Arjun – demands of Ekalavya his right thumb as Guru Dakshina (a gift that every pupil must make to his teacher on the completion of his education).

Ekalavya, bound as he is by the protocols and codes that govern the transmission of knowledge in society, cuts off his thumb (the one with which he grips the bowstring) and offers it to the guardian. The subaltern exchanges his mastery of archery for the knowledge that the warriors will always be different from him, and that it is his identity as a lowborn aboriginal that will underwrite this difference. The difference will locate him, as well as them, in the places assigned to them by the guardians of social order, and his bloodied thumb seals the terms of this inexorable contract.

The subaltern Ekalavya's bloodied thumb (the first demand for a digit as a mark of identity) remains with us as a resonant smear of the truth of power. Ekalavya's thumb, which guided his grip over the bowstring, can be seen as symbolic place holder for the inextinguishable recurring decimal, which makes the low born aboriginal teenager similar to the warrior princes by the same logic that makes all human beings similar or different from other human beings – their individuality. It is that complex interplay between their genetic inheritance, their social experiences and environment and their specific desires. The rounding off of this digit, this inextinguishable recurring decimal to the nearest available whole integer, marks the 'identity' of the subaltern, and the clear 'difference' of the subaltern from the prince. The bloodied smear of the truth produced by the apparatus of identification tells Ekalavya, overriding all ambiguities, who he is, who he is not, and what he never can hope to be. A technology of location, registration and the production of knowledge, does successfully extinguish the obstinate

recurring decimal. The digit is cleaved from the body, and Ekalavya, like all of us when we give up all our digits to the state, loses the means and the skills acquired with effort to defend himself.

What the technologies of identification do not take into account, however, is the ability of a person to enact different iterations of the self. Crucially, this means that the story of personhood, and the narratives of identity that gather around a person, are material available for constant re-fashioning. It means that the question of identity can also give rise to a hyperlinking of aspects of being – an expanding and cross referencing matrix of acts, attributes and attitudes that constitute the database of a person's 'becoming' over time. Thus, even if Ekalvya's amputated right thumb is an emblem of the way in which a discourse of power wishes to reduce his identity, it cannot guarantee that Ekalavya, in some other narration of his story, may not decide to learn to use his left hand.

The identity of Ekalavya, then, is something that emerges from the relationship of two kinds or enactments of selfhood. It is something that bridges the person whose right thumb got cut off and the person who decided to learn to use his left hand, and cultivate a left-handed knowledge of the world. The inextinguishable recurring decimal by its very nature resists being rounded off to the nearest whole number, and continues its fractal dance on the adding machine.

Ekalavya's effort with his left hand, may give rise to speculations in some quarters about the distance between the 'original' and the 'counterfeit' Ekalavya – the first, the devoted disciple willing to efface himself out of deference to the knowledgeable guardian, and the second, the one who goes against the 'moral of the story' and rises above or beyond his 'station' to be something or somebody he never should have been. This is not to say that the 'fake' Ekalavya, who keeps the label of his name but changes the content of his person, does not have an identity. However, this identity is something that he fashions, taking something from a story already told about him and something from a story yet to be told, in such a way that it is impossible to construct a hierarchy of veracity. What he

is, what he is reduced to, what he desires and what he becomes, are impossible to place along a graduated scale of more and less truth. They tell different truths about the different acts of personhood that are possible to imagine on the ground of Ekalavya.

EKALAVYA'S LEFT HAND

In these random reflections, we have tried to sketch an itinerary that moves from a set of fading photographs in the basements of archives, to the thumbprints on a ledger of landholdings, to a strange story about a bloodied thumb. These digressions have been a way for us to think about the present we find ourselves in. A climate of paranoia about national security has made it possible for key factions within the Indian state to argue for the creation of a nationwide citizens identification database tied to a system of smart cards containing biometric data about every 'legal' Indian citizen. This apparatus, which is being touted as the solution to all problems ranging from terrorism to the crisis of identities within contemporary India, is in our eyes the worthy inheritor of the legacy that produced Ekalavya's thumb in mythic antiquity, the measuring rod amidst the Andamanese in 1862, the fingerprints of the peasants of Jangipur in Bengal in 1858, and the system devised by Henry, Haque and Bose of the Bengal Police in 1897. In a single digital move it is able to forge a solution to the problem of identity that bridges the realities of the twenty first century, the history of the colonial era, and an ancient fable.

A continuous state of emergency (what Agamben has characterized as the state of 'exception' peculiar to our contemporary reality) produces its own specific sense of fatigue – an exhaustion that comes from remaining alert to yielding oneself up to acts of random or routine scrutiny. This wakefulness and watchfulness, this baleful insomniac rendition of the self into units of meaningful information, is the unexamined personal collateral damage of the rise of a global apparatus of interlocking security and

surveillance systems.

For some time now, many parts of the world, particularly those that are governed by the imperatives of the global war against terrorism, have learnt to live with a state of emergency, a moderate intensity level of panic and anxiety that makes the predatory excesses of the scrutinizing eye seem banal by the mere fact of exhausting repetition. And so, we succumb. We do so not only at airports and border posts, but also at workplaces and public spaces in large cities the world over, to routine and random searches of our persons, to scans, registrations, surveillance and recordings of the traces of our actions, our encounters with others, our presences and transiences, our itineraries, purchases and decisions, our intimacies and our public acts, our utterances and our secrets, our habits and our desires – the minutiae of all our lives.

We see surveillance, particularly new technologies such as facial recognition, retinal tracing and biometric scanning, as performing a similar set of operations to those undertaken by early anthropometry and fingerprinting. The body as data is also put to analogous uses, especially for 'racial profiling' at airports and other transit points, just as anthropometric photographs were used to substantiate elaborate theories of racial typage. The intensive application of surveillance technologies at public places, work, and even in the home or in the private sphere leads to a monitoring of thought and affect to a degree that suggests that we can now begin to speak tentatively of an 'anthropometry of the soul'.

ABOUT THE AUTHORS

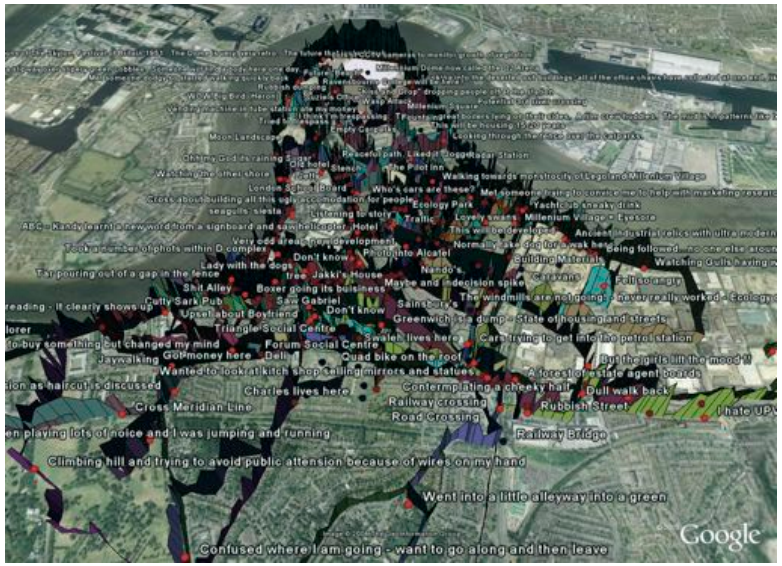
Raqs is a collective of media practitioners that works in new media & digital art practice, documentary film-making, photography, media theory and research, writing, criticism and curation.

NOTES

[**1**] Emp. Sahdeo, V.S.; in Aiyer, K. J.(1949) *'Law and Practice of Evidence in Criminal Cases in India and Pakistan'*. Allahabad {p.461}.

[**2**] For a detailed discussion of the history of Anthropometric Photography in the Andaman Islands, and in India in general,
– See Pinney, C. (1997) '*Stern Fidelity'* and *'Penetrating Certainty'; in 'Camera Indica'*. Reaktion Press, London.
– See Edwards, E. *'Science Visualized: E.H. Man in the Andaman Islands'*.
– See Pinney, C. *'The Parallel Histories of Anthropology and Photography'; in* Edwards, E. (ed.) (1992) '*Anthropology and Photography 1860–1920'*; Yale University Press, New Haven and London, in association with the Royal Anthropological Institute, London.

[**3**] For a history of fingerprinting in India, see Sengoopta, C. (2003) *'Imprint of the Raj'*; Macmillan, London.



This image shows all the participants' tracks and annotations of the Greenwich Emotion Map.

A FUTURE LOVE STORY

MARCEL VAN DER DRIFT

Twenty years from now, a cell phone gently sinks to the bottom of the river. It's one of the latest models. The clever design, trendy colours and nifty features make our cell phones look ancient. Everything about it is new. Cell phone isn't even the right name for it. It's hard to describe exactly what it is. So I won't.

Anyway, this phone, for lack of a better word, belongs to Steve, who is on the bridge, feeling generally depressed, but for the moment happy to be rid of his phone. It was a powerful gesture. Steve got wired up only half a year ago, after everyone else had been wired up for years.

People used to ask: "*Are you wired up ?*" That question was soon followed by: "*Why aren't you wired up ? Are you religious ? Aren't you curious ?*" They looked at him suspiciously and you could hear them think: *"He must be suppressing something. Definitely some sort of denial"*. Getting wired up means having all sorts of sensors either implanted or attached to your clothes.

They're connected to your cell phone to monitor heart rate, temperature, the sound of your voice, the position of shoulders, hands and feet, chemicals in the blood and what not. These sensors have been around for decades, even small portable ones. Their first use was medical:

monitoring health and medication, correcting bad posture and compensating all sorts of disabilities. They had also been used successfully in psychology: monitoring body language, metabolism and chemicals in the brain. Data was gathered from many patients over time, giving new insights into psychological disorders. But it only took off when some clever marketing guy, later to become yet another trillionaire, realized their combined potential for the consumer market. When people started using their game consoles to train their memories and concentration, he thought: *"Maybe they'd like to know about their emotions"*. By then, sensors and software could read people like a book. This marketing whiz quickly teamed up with academic researchers and major producers of sensors. And suddenly there was this huge company selling 'insight, one-ness and emotional connectivity'. It started an industry of self-reflection, mood blogging, mood matching, real-time automated flirt coaching and some embarrassing employment relation strategies

Steve, however, was reluctant. He didn't need any software to tell him how he felt. He was depressed. Three years after losing his job as a garbage collector to some smart-ass system, he was definitely depressed. But he was determined to handle it on his own, as he always had. Then Steve got even more depressed. When he finally decided to get help, he skipped the on-line forums and arranged a face-to-face talk with an old fashioned trained expert: R.L. Steinberg, MD, psychiatrist. Doctor Steinberg's first question to Steve was: *"Are you wired up ?"*. *"No, I'm not"*, he sighed. *"Is there any particular reason you're not wired up ?"*. At this point he used to express his concern about privacy and security, but that argument didn't seem to convince anyone anymore. *"I don't need it. I know how I feel"*. *"I see. Of course self-reflection is the best tool. And I'm sure we can understand your situation by discussing it here. But some data would be very useful. You see, the way we see ourselves is often different from the way we actually behave. When a child is frustrated, it doesn't say*

'I'm frustrated.' It just starts kicking things over. It needs to be taught then and there, by adults who understand this behavior, that what he is feeling is frustration and it can be expressed in different ways. Even adults have difficulty understanding their emotions at some point in their lives. They mostly need feedback from others, but they also gain insight into themselves from a higher perspective, so to say, from objective long-term observation of their behavior. It's no magic, but a useful tool". "I see". "I suggest you get wired up without any interpretation software. You'll just get the sensors and leave the rest to me. All that software just oversimplifies everything anyway. We can look at some of the data during our meetings, if need be".

So Steve got wired up. He met doctor Steinberg every Tuesday and promised to follow his advice on exercise, sleep, diet, etc. But he couldn't get himself to actually do all those things. The meetings with doctor Steinberg, who confronted him with data to prove his lack of motivation, got more and more embarrassing. Eventually he stopped seeing him. Instead, he downloaded the latest interpretation software. During the installation he opted for 'brutally honest' instead of 'constructive' or 'positive'. Now he wasn't depressed. He was 'lethargic, unconcentrated and easily agitated'. *"So be it"*, he thought to himself as he scrolled through the diagnosis on his cell phone. It also said "hungry". *"Am I hungry ? Well, come to think of it, I am."* And he told his phone *"I'd like to order a chicken curry, anywhere"*. It replied *"Chicken curry has been ordered at Phonsawan, located ten minutes from here"*. His left shoe started vibrating, so he turned left. As he walked to Phonsawan restaurant for the first time in his life, he thought: *"Funny how quickly you get used to this stuff. Three months ago, when my shoes first started vibrating, my first impulse was to kick them off. Now I'm not even aware of them. I just turn left or right because that's where I need to go"*. He read somewhere that shopping malls are installing vibrating floors just to lure customers into expensive

stores. He even checked to see if it was a hoax. One site strongly denied these claims, but it seemed to be sponsored by the same shopping mall. That didn't have to mean anything though, because those ads are placed anywhere automatically, or so he thought. He didn't feel like digging any deeper. True or not, he decided vibrating floors in shopping malls were very unlikely. Right then, both his shoes vibrated shortly, indicating he had arrived at the restaurant, just as planned. He wasn't at some expensive store and this somehow proved his point.

The rest of the evening was spent eating curry, staring at the waitress, ordering beer, staring at the waitress and ordering one or two more beers while staring at the waitress. In the end Steve felt better than after any meeting with doctor Steinberg. As he walked out of the restaurant to cheerfully follow his "good vibrations" home, he felt the urge to check his mood on his cell phone. *"Happy"* it said. *"That's right"*, he thought, "*I know it. I feel it. Who needs these gadgets"*. *"More details"* it said. *"Ok then, get me the details"*. A warning screen appeared. He clicked "ok" and read: *"Happy, intoxicated, consumed too many saturated fats, sexually aroused"*. *"I beg your pardon ?"*. Steve asked, clicking on. *"Repeated sexual response when in contact with female x"*. Up came a chart showing his hormones, blood pressure, some correction for the influence of alcohol and this "female x". He clicked on, passed some warning screens about revealing his identity and requesting information from other people. Then it said: *"Annoyed"*. *"I'm not annoyed, am I ? Just curious"*. The next click made it all too clear. There was the picture of female x, the waitress from Phonsawan restaurant: *"Tired, embarrassed and annoyed when in contact with Steve Smith"*. Steve felt a dark, numbing heaviness come over him. *"That's how she saw me. And that's what I am. Annoying"*. He stood still, ignoring the vibrations in his feet. *"That's what I am"*, he repeated, as he slowly fiddled with his cell phone. *"Connection terminated"*. He sank to the ground as he realized what had just happened. He had asked the waitress what she really felt for him. She must have read his request and thought *"What a creep"*. She had rejected him. Slumped on the pavement, he slowly clicked *"Exit"*

until the main menu appeared. *"Current mood: depressed"*. Some time passed. Steve still felt depressed and rejected, as he suddenly stood up and told his phone *"Take me to the highest public area nearby"*. His right shoe vibrated and off he went. This was an old habit. At times when he was most down, he'd wander through the city, late at night, looking for certain places. Places he could jump from. Not that he ever actually did. He knew he never would. But just standing there, on the edge, feeling the wind, having the option to jump, somehow everything made sense to him. He was aware, awake, charged, relieved, comforted, everything. No software would make any sense of it, but that was how he was.

He felt determined as he walked toward the city centre, even though he didn't know where he was going. Being guided by vibrations in his shoes was a little different from the old, long walks to nowhere, but he went with it. It was cold and windy at the bridge. Perfect. Walking toward the middle, he started wondering how he felt. Was he relieved? Comforted? That was when he decided to chuck his cell phone in the river. He swung his arm backward, which was interpreted as *"Greatly surprised"*, and he flung his cell phone as far as he could. It was a powerful gesture. The device made a disappointingly small splash, but Steve was relieved. *"I am relieved"*, he thought, *"Definitely relieved"*. His cell phone slowly sank deeper and deeper to the bottom, still giving off a blue glow. It silently landed right next to another cell phone, which also gave off a blue glow.

This second cell phone belongs to Sandy, who is also on the bridge at this very moment, feeling both depressed and relieved. As she climbs the railing to look down at the water, she notices Steve, balancing on the railing, walking slowly towards her. Meanwhile, at the bottom of the river, their phones are frantically trying to interpret their increased heart rate and a sudden surge of dopamine.

ABOUT THE AUTHOR

Marcel van der Drift is an artist/programmer working on storytelling, co-creation and community sites.

The images on the next few pages are all from the San Francisco Emotion Map, 2007. The images show the final printed map as well as documentation from the process of working with people to gather the biodata.


21TH ST
22ND ST
23RD ST
24TH ST
Naked sunbathers in Dolores Park
I used to live here. Now there is crap in front of the door
Got phone call from my friend
I was entertained by people flinging themselves rolling down the hill
Set down here for a while and enjoyed the view. It's surprisingly empty for a sunny afternoon
There was a couple on a Vespa that almost got hit by a pickup
Looking at window of closed corner store that I used to go to all the time. Something happened to them
Checking out the view thinking about past times in the park
Steep hill
People asking for change
Lovely views
Taking in the view
Started walking up hill
Ran across busy street and saw the cutest dog
So busy here with hipsters and their babies
My hip really hurt and I decided to turn back
Put money into the meter
Traffic
Sidewalk juice, stayed
Found 3567, the old house that I want to fix
Singing
Enjoyed a moment with my girlfriend
Went and read my book near Aquarius and got
Remembered Lee's birthday party
Diana and I separated. I walked passed Fink's house and felt calm
Waved to Aimee while she convalesces
Lots of activity
Stopped to talk to
Walking up steep hill
Giant hill
Narrowly avoided a puddle of vomit
The houses are beautiful. We imagined living on a street like this
Aimee and I play
Felt anxious here. Is that just
Major construction
Realised the park was the other way and hoped that Aimee ignored me
Peeing in the alley
Dancing around the trees!
Crossing
I was hiding underneath a flowering plant. Diana sees me. I smiled
Met up with Johnny and Jill
Latin American club, used to go here every wee
Hilly area with lots of tree cover
Great mural of poppies and the extinct Xerces butterfly
Walking down a hill. My knees were sore. I should get back to work
Aimee hides behind a car
Out of the alley. Yes!
Muni train coming by and I thought about getting on it
Cool house with really unusual garage door
Looking at really neat plants in a little garden. So sad that the gardens store is moving
Walking with this girl and she was asking what I was up to
Thought I saw a friend but it wasn't her
Beginning of tiny alley
Street crossing
Apartment door was open and I thought about where I could live next year
I dropped her off here
Ran into my friend with his puppy
House here reminded me of flowers at a funeral
I can see my house from here
Spoke to old woman with dog, both with matching leopard skin outfits
Taking a picture
Began to eat chocolate
Open garden park - florist
Looking at attractive people noticing smells
Saw a familiar face but turned out we didn't know him
It was raining and I slipped
Motor cyclist had just been hit and five people were carrying him
I realized what a luxury it was to take a walk
Got coffee
Martha's Brother's best latte in town
Felt hot but was a calm area
House with clear perch on top
Walking towards familiar territory
Beautiful Victorian houses
Street of my childhood, nostalgia, rain and umbrella
A clothing shop has an orange polka-dotted dress
Cool breeze
Painted Bird, cute girl behind the counter
Cool view across the whole of downtown
Trying to think of positive applications for this tech
As I reached the top of the hill the lovely view opened up
Ran into someone I

San Francisco Emotion Map by Christian Nold

Common everyday maps typically show static architecture and exclude the people who inhabit and create the place. The San Francisco Emotion Map attempts to remedy this by mapping the space of human perception and experience. Over a period of five weeks, 98 participants took part in Christian Nold's Emotion Map project commissioned and hosted by Southern Exposure, a non-profit, artist-run organization located in the Mission District. A series of weekly workshops took place whereby the participants were invited to walk around the area using Nold's custom built Bio Mapping device. The device combined a finger cuff sensor which recorded the wearer's Galvanic Skin Response (GSR), an index of emotional response, with a Global Positioning System (GPS) which located the wearer's position on the earth. Derived from the polygraph, a system used by law enforcement agencies to identify when a person is lying, the finger cuff sensor is used in a much more diplomatic way. Instead of handing over one's own biometric data to an authority for judging, the participant is instead asked to interpret their body's response allowing for a more subtle understanding of their experiences.

Starting at Southern Exposure, each participant walked for up to an hour throughout the Mission District and surrounding areas. Upon returning to the gallery the collected data was downloaded to a computer where each participant could view their personal 'emotion map' as a series of high and low peaks (represented on the map as dots of varying colors). The arousal response recorded by the device could be positive or negative and required active interpretation to make sense of. In the workshops, each participant studied their own track and then talked with the group about their 'emotion map' in relation to their experiences on the walk. As a result of this reflection, they added annotations to points along their track that they considered memorable or important.

All together, 98 individuals' annotated tracks were gathered, combined, and overlaid in order to create the communal San Francisco Emotion Map. On the map, the overall pattern of dots shows where the participants walked. The color of the dots represents the combined emotional data of all the participants with red signifying high arousal and black signifying low arousal.When looking at the entire map, there is a general arousal gradient from high in the center to low near the edges. The density of red dots and annotations indicate hotspots of communal arousal, while the darker dots show areas of communal calm. There are a number of distinct clusters of red dots on the map. The cluster around Southern Exposure can be attributed to the participants' unease of being wired up with the Bio Mapping device, an unfamiliar piece of equipment with many wires involved. Another vivid red cluster can be seen at the intersection of 24th and Mission. This intersection, centered around a major BART (local train) station, is extremely busy with social interactions. The workshop participants often remarked on the Evangelists, commuters, skateboarders, demonstrators, as well as the people outside of the local McDonalds. There are interesting arousal and annotation clusters around the three parks in the area - Dolores Park, Precita Park, and Bernal Hill. These areas provide inspiring views of the city as well as provoke reflection on past memories.

It is also interesting to look at the clusters gathered along the different roadways in the city. The heavily frequented Valencia Street shows up strongly while the surrounding residential streets seem universally calm. Cesar Chavez, a major thoroughfare through the south side of the city as well as an onramp to a major highway, appears to be universally disliked for being a highly trafficked and noisy street. Clusters are also found on streets full of murals like Balmy Alley, as well as around the pocket parks like Jury Commons, where communal arousal and the large number of positive annotations indicate the hidden landmarks of the Mission District.

Apart from these communal patterns it is remarkable to look at the diversity and uniqueness of an individuals experience of the city. Some people's responses are shaped by their memories while inspiring views, old Victorian houses, or green spaces influenced others. There are still others who responded by absorbing the present.

MAPPING THE UNSEEN: MAKING SENSE OF THE SUBJECTIVE IMAGE

STEPHEN BOYD DAVIS

It used to be thought that photography, as a kind of automatic mapping, could provide an objective view of the world. Now we are aware of the power of framing and other interventions between what is out there and what is captured in depiction. Perhaps even perception, let alone depiction, shares this subjectivity ? The Sapir–Whorf hypothesis holds that different cultures actually see the world in different ways, as evidenced and influenced by concepts in their languages – though this idea has been derided, for example by Pinker (Sapir 1924, 1949; Whorf 1956; Pinker 1994:62). A key difficulty is that the word subjectivity is bandied about without care for its different meanings and without distinguishing the many forms it takes in the graphic image. If into this muddle we introduce the idea of interactivity, still greater confusion could follow. What follows is a way of bringing some order to different kinds and levels of subjectivity by documenting how they are reflected in forms of graphical mapping. In the process, it will become clear how significant is the change in media technologies from those bound by the conventional rectangles of the page and screen to media which are interactive, pervasive, multimodal, physical and social.

INTERPRETATION AND SUBJECTIVE MAPPING

Geographic maps often appear to be among the more objective kinds of graphics. We think of them as representing in a rather direct way something in the world. However, as semioticians from Pierce and Saussure onwards have pointed out, words, maps or even pictures do not represent things, but shared ideas of things. Even so, the very form of a map, with its way of viewing the world from an equal distance above all places, seems to carry a sense of objectivity. Contrast this with the strongly located stance of a perspective view: in such a view it is obvious that we are looking at one viewpoint – literally and perhaps metaphorically – onto a scene. It is a place seen by an observer, while a map shows a place that seems to exist independently of being looked at.

Despite their apparent message of objectivity, maps select and even distort, because maps, like all images, are made for purposes, and those purposes influence the final form (Boyd Davis 2007). In some cases, the distortion might be for simple practical reasons: streets in an atlas may be made broader to accommodate street names at legible sizes. In most maps, significant features are picked out in darker tones or stronger colours depending on the intended uses of the map: this kind of graphical selectivity is one of the services we expect the mapmaker to provide. While aerial photography presents everything which the camera sees, prioritising nothing, a well-made map serves its purpose precisely through its selectivity. We can click back and forth between two representations in Google Maps to get the complementary benefits of either: the all-seeing, unknowing photographic image of the camera, or the intentional communication of the drawn map. There are cases, however, where the selective processes which a map represents are not so readily acceptable. Mark Monmonier has published a number of entertaining books, including the canonical 'How to Lie with Maps', on the distortions introduced, sometimes with malicious motives, in all kinds of geographic mapping (Monmonier 1996:186). Aside from these deliberate and conscious interventions,

in some ways more profound distortions are those which pass unnoticed because they embody a shared cultural perspective which makes them transparent. Ted Nelson argued that a terrestrial globe (scale model of the earth) , is a good example of directness, untrammelled by metaphor or other representational filtering: *"A globe does not say "Good Morning"; it does not bother you with menus, icons or prompts. You turn it and move your head to the most useful position for overview or detail, that's all "* (Nelson 1990).

Yet even a terrestrial globe does not have the purity that Nelson hopes. The northern hemisphere is conventionally at the top of these devices, placing the developed, map-making world on top, and the mapped, under-developed world beneath. It is hard to recall that there is no 'right way up' to the globe we live on. When the globe is projected onto a flat surface, distortion becomes inevitable and the merits of the different projections are hotly contested (Snyder 1993). A technical necessity as simple as framing can have unacknowledged consequences for how we see the world. So map-making, even when apparently most objective, is, like any representation, not the straightforward transferral of visual data to a surface that it might seem. Representation chooses what it measures and conveys. And already in this brief discussion, different forms of subjectivity have surfaced. The most basic is that subjectivity arising from who and what we are, and from the nature of representation, which prevents us from ever making maps or any other images which are exact equivalents of what they represent. Overlaid on this is the subjectivity created by the shared culture of large groups. Only encounters with other cultures, across space or through time, draw attention to its existence. Often, dominant groups assume that the shape of their world is the shape of the world. But there is increasing recognition that other groups live in other shaped worlds which can be mapped in different ways.

FROM WHERE I STAND

The shape of the world changes depending on who you are and what you do. A recurrent motif in industrial societies has been to see space as increasingly compressed by the new ease with which it is traversed, and this has often been described as though it were the same for all observers. Thrift (1996: 264–265) considers this compression concept to have been associated with stagecoaches, railways, bicycles, the post and the telegraph: certainly the railway age has many such references. For Heine, (quoted in Schivelbusch 1986: 37) *" The elementary concepts of time and space have begun to vacillate. Space is killed by the railways. I feel as if the mountains and forests of all countries were advancing on Paris "*. For Williams (1852: 284–85) *" The extremities of the island are now, to all intents and purposes, as near the metropolis as Sussex or Buckinghamshire were two centuries ago "* . And the hyperbole continues: *" Lille and Brussels will be within striking distance for daily commuters "* according to a 2007 newspaper article on the newly opened cross-Channel rail link at London's St. Pancras station. This is one kind of subjective mapping, where increased speed of access makes the world a different size and shape. However, this is more subjective evenz than it seems, since it is experienced differently by different people. Feminist geography has provided a valuable critique of the lazier generalisations concerning time–space compression. Massey (1993) was among the first to point out the unreasonableness of suggesting that spatial compression was the same for everyone at a given historical period, regardless of wealth, gender or other factors. She highlights how the degree to which we can move between countries, walk about the streets at night, take public transport, or venture out of hotels in foreign cities, is not influenced simply by universal changes such as the flow of capital or the availability of technology. In the same volume, Rose takes exception to just that kind of apparently objective mapping described above, arguing that *" This transcendent, distanced gaze reinforces the dominant Western masculine subjectivity in all its fear of embodied attachment and in all its universal pretensions "* (Rose 1993: 71). One alternative lies in the use of time–space mapping, a conscious attempt to reintegrate cultural subjectivity – in this case women's spatial mobility, their access to resources, and the power relations which constrain these into representation.

"Feminist geographers have used time–geography to detail these processes, because of its sensitivity to the routines of women's domestic, everyday lives. Time–geography traces the rountine paths of individuals in time–space and is especially interested in the physical, technological, economic and social constraints on such movement. It claims to demonstrate how society as a whole is constituted by the unintended consequences of the repetitive acts of individuals". (Rose 1993: 76)

Such work is continued by Mei-Po Kwan at Ohio State University, who has argued that Geographical Information System mapping – often regarded as anti-feminist because it appears to confirm an 'objective' map of the world while really being nothing of the sort – can in fact be harnessed to investigate the subjective world of minority groups. It should be noted that these are allocentric representations – 'from the outside,' looking on at the aggregated space–time paths of cultural clusters: they are not attempts to see the world from within as it may appear to the subjects themselves. The features of the landscape are still separated by their conventional Cartesian distances.

In other mappings, Cartesian distance is replaced by subjective measures representing other kinds of accessibility. For example in a map by Oskar Karlin, the lines of the familiar London Underground diagram are distorted to represent one additional dimension – the length of time it takes to reach each station from Elephant and Castle, an inner-London station south of the Thames. Karlin also alters the colours of the lines to represent each line's average speed. Even the classic Beck London Underground map uses distortions, to serve practical purposes and incidentally to convey a message, and these start to embody a subjective point of view expressed through the geometry. The central area of the London Underground map is enlarged in relation to the periphery. While this is largely to solve a practical

problem of accommodating the greater density of stations in that area, it also has the effect of giving greater importance to the central region, rather as a fisheye lens does for a photograph. Physically peripheral areas become metaphorically peripheral too. This is an analogue of subjective vision, in which what we attend to is in the centre of the field of view where visual discrimination is finest, while things not currently of importance are confined to less well defined regions at the edge of sight. The subjectivity inherent in the idea that geography depends on where you start is dealt with by another method in space syntax diagrams (Hillier and Hanson 1984). Two rooms of a building may adjoin in a plan view, but be far apart in a space syntax diagram if there is no direct connection between them. Markus among others has used this to show how buildings may offer very short routes to sites of power, such as the ready access to doctor's rooms in a health centre for the doctors themselves, compared with long and complex routes for others – such as the patients (Markus 1993: 14). Like the work of the feminist geographers, these maps reclaim mapping for those whose view would be lost in those so-called objective mappings which are really mappings for the majority or those in power. Though space syntax diagrams augment traditional topography with a topological diagram, showing how the connections to adjacent spaces present themselves when approached from one particular starting point, they also take up a viewing position 'outside' the subjective, depicting that subjectivity from without rather than within.

Perspective itself, of course, even when not in the extreme form of a fisheye view, prioritises what is near over what is far, and does so through selection of view. In 2005, the BBC chose to replace its traditional weather map of the United Kingdom with a perspectival view onto a VR model. Since any such view must be seen from somewhere and, perhaps inevitably, the designers chose to view the nation from the south, the result was that Scotland, now furthest away, became little more than a distant blur. The BBC Trust criticised these forecasts for breaching the corporation's duty of impartiality (BBC Trust 2007: 53). Such subjective tendencies in perspective

were earlier used consciously and humorously by Saul Steinberg in a 1976 magazine cover mocking the typical New Yorker's alleged view of the world. Ninth Avenue looms in the foreground with Tenth Avenue just behind; a short way further off is the Hudson river; beyond in rapidly decreasing scale and definition is all the remainder of the United States, equal to the size of just three New York city blocks; finally beyond the Pacific lie China, Japan and Russia, vague mountain ranges on the horizon (Steinberg 1976). The subjective view of the Londoner or the New Yorker is represented from within, by a point of view onto the world.

ME, NOW: INTERACTING WITH SUBJECTIVE VIEWS

Interactivity allows the map-maker to drill down, beyond the subjective view of cultures and sub-cultural groups, to the view of the individual. The useful properties of visual distortion for this purpose were explored several years ago by emulating in software the subjectivity of attending to what is central. Within a hierarchical tree of information, as visualised by Lamping, Rao and Pirolli (1995), users could change their subject of attention either by clicking on any visible point to bring it to the centre or by dragging a distant part of the information landscape to the central position, most detail being allotted to the centre, least to the edges. In this way topics close to what interests me most at the moment are prioritised while others fall away towards the fringes. The topic map is visually sensitised, not only to the subjectivity of the individual, but to that of the moment, a kind of temporal subjectivity.

Inspired by Karlin's Underground map described above, Tom Carden (2005) has produced a dynamic Travel Time Tube Map in which the geographic layout of the stations is distorted on demand to represent travel times from any station nominated by the user. Once more we are looking at subjectivity from the outside, but now designed, through interactivity,

for the individual's momentary needs. In a sense, the ability to use the map to see the network from any station, rather than just one, re-introduces an element of objectivity, since now the map behaves appropriately when operated by any user for whatever location; but the most important feature for this discussion is the way in which responsive interactivity becomes the means for users to see their own map, configured to their interest. This is a crucial aspect of modern subjective mapping: instead of being locked to a single subjective interpretation, it is momentary, contingent on needs expressed through the medium of interaction. This does not lead to the 'death of the map-maker,' any more than the responsiveness of interactive digital texts led to the 'death of the author' as some at one time anticipated. However, it does alter the respective roles of map-maker and user. Interactivity means that authors are creating opportunities for the user's action as much as they are communicating to the user. As in other areas, new map technologies have increasingly made it possible to deliver in practice the otherwise largely metaphorical 'open work' (Eco 1989) in which the work is a field for action as much as a form of presentation.

The increasing responsiveness of digital systems creates many possibilities for implementing temporal subjectivities. Like Carden's Tube Map, some of these are based on an essentially conversational model of interaction in which each of the user's successive 'questions' – expressed by interaction events – is answered in turn by a response from the system. Work at University of Maryland over many years has aimed, by providing a responsive interface, to enable users to explore complex data sets more rapidly and effectively than with static systems, and some of this work has dealt specifically with maps which change according to need. In some cases, discrete inquiries (such as by clicks of the mouse) are replaced by smooth, continuous change. Work of 1994 showed the use of on-screen sliders to move through a virtual additional dimension of colour in maps of the United States, allowing the user to not only see but in a sense 'feel' the patterns of health data and their correlation with income and other factors (Plaisant and Jain 1994). This has been characterised by Peuquet

(2002: 157) as **playing** with maps to see what latent relationships emerge.

Of course now we have the ability in everyday SatNav systems to go even further beyond conversational models of interaction and get continuous feedback to the recurrent questions where am I? And what should I do now? The global positioning system calculates a position on the Earth's surface in relation to the heavens. The method is analogous to navigating by the stars, though these stars have been installed by us in the form of satellites. When GPS is embedded in a personal portable device, it effectively positions an individual in relation to the cosmos. But while the technology itself is highly objective, applying the same rules to every GPS client, it is also intensely personal. This is my position, mapped for me on my device. It is also essentially based on the idea of now: like earlier navigation technologies, GPS is reliant on knowing the correct time. So the map is made not only for me, but for me now at this moment.

MAPPING BECOMES PERVASIVE, MULTIMODAL, SOCIAL AND PERSONAL

The availability of inexpensive, lightweight GPS devices has encouraged the development of innovative location-based projects. A small number of these add to location-sensitivity a responsiveness to other forms of dynamic personal data. Christian Nold's Emotion Map investigations, described elsewhere in this volume, present the individual's subjective state, measured using Galvanic Skin Response as an index of arousal, within the map of a district. Each map is therefore a personal record of an emotional as well as a physical journey. These subjective mappings are constructed retrospectively, allowing subjects to reflect on their experience – and those of others. In addition, the records of these personal journeys can be aggregated into a composite map which represents the emotional engagement of a group, showing where the community feels stressed or

excited, so both personal and group subjectivities are depicted, and both incorporate transient temporal phenomena.

A parallel approach is taken in the project 'Ere be Dragons (Boyd Davis et al 2007). The user wears a heart-rate monitor connected to a smartphone or PDA with GPS capabilities. Here the mapping takes place live, as a part of the experience of moving about in the world. During a walk, an on-screen landscape is built which corresponds spatially to the real one around the player. At each stage in a journey, the graphical presentation of the route reflects one of five states. Squares of flourishing landscape are displayed where the walker achieves their optimum heart-rate (previously calculated from their age or their resting heart-rate). Either side of the optimum, the squares will be desert-like if the rate is too low, or grimly forested if too high. Beyond these zones the whole behaviour of the landscape alters, darkening and eventually disappearing. A distinction made by Schön (1983) highlights an interesting difference between Emotion Map and 'Ere be Dragons: that between reflection-on-action and reflection-in-action: in the latter, the ongoing experience is subject to constant feedback, rather as when a designer draws, and both observes and responds to the drawn marks in a continuous cyclic experience. Because action and reflection are almost simultaneous, users modify their behaviour in the light of the current state of the map. Such projects are special cases of external cognition (Scaife and Rogers 1996) where, rather than the output representing processes of the mind, it as much represents those of the body. By constructing cognitive artefacts for our own perception we became capable of processing the knowledge they represent in alternative ways which are not easily accessible while they remain internal. The territory as mapped is an externalisation of something which belongs to the user. When this is presented to the user on a device held in the hand while walking, as a kind of prosthetic extension, the element of personal, temporal subjectivity centred on the subject is brought to the fore.

These experimental projects take subjective mapping further than it has gone before. This discussion began by emphasising how all

map-making, however apparently objective its motivations, is affected by considerations which give it characteristic forms. To represent is to select, interpret, translate, transform: this is the first level of subjectivity. Next, selections and distortions which belong to whole cultures and to groups and subgroups are evident – these are the cultural subjective and sub-cultural subjective. The latter may take on a conscious socio-political aspect, as in feminist geography, or may simply reflect in some way that the world is different depending on who you are and where you start from. Interactivity introduces the possibility of customisation to the individual and to the time: the individual subjective both spatial and temporal. With the advent of portable interactive technologies sensitive to multimodal inputs, what matters to me now at this moment in my current location and circumstances can become central. This introduces a form of subjectivity we could call the egocentric subjective, in which my location and other aspects of myself impact decisively on the representation. This is perhaps the furthest that subjectivity has ventured so far, but technological change continues its interplay with altered perceptions of geography to produce unanticipated forms of mapping.

ABOUT THE AUTHOR

Dr. Stephen Boyd Davis is the Reader in Interactive Media at Middlesex University.

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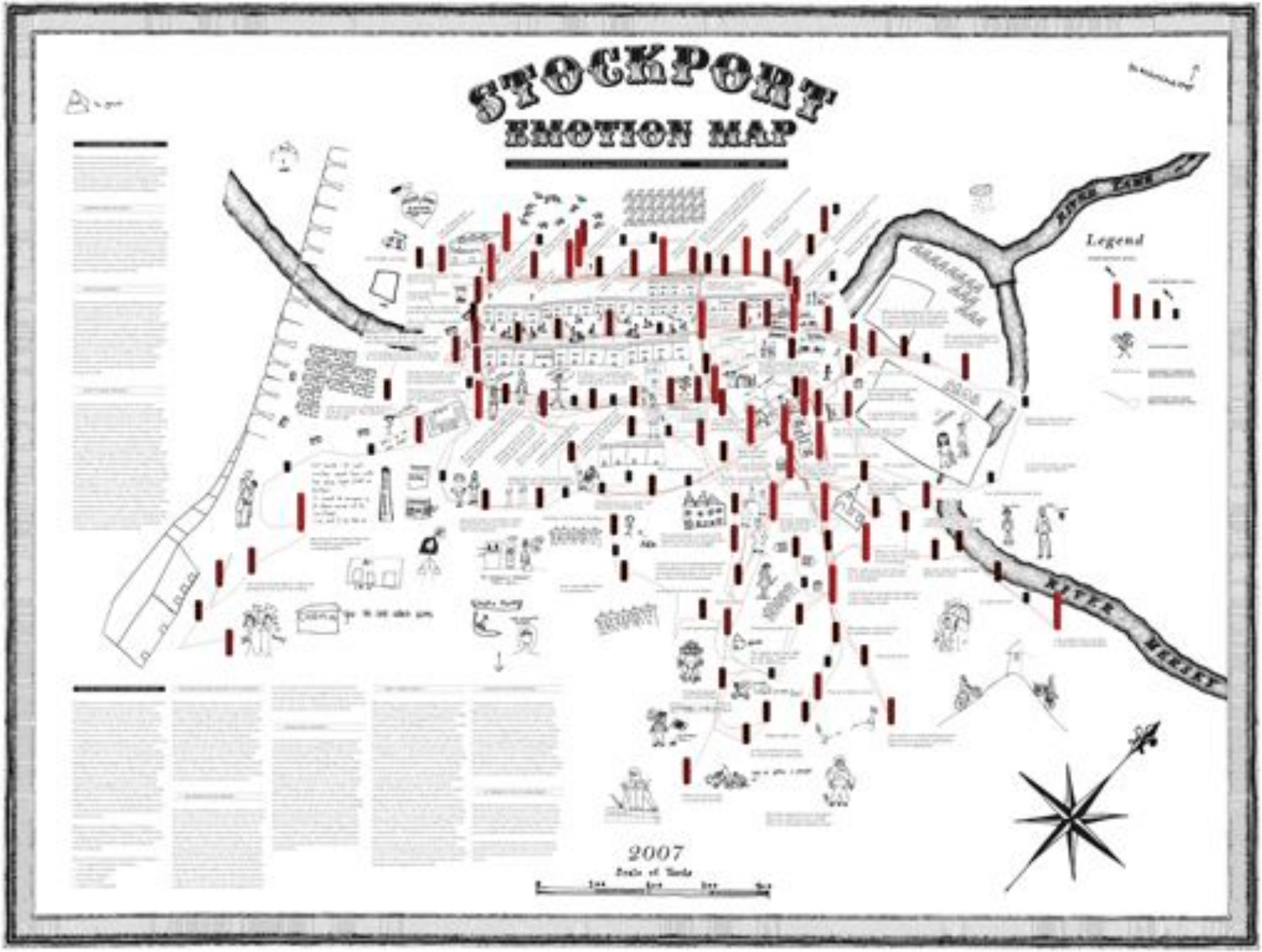
The images on this and the next pages are all from the Stockport Emotion Map, 2007 which was commissioned as a public consultation project by the local council and an urban developer.


STOCKPORT
EMOTION MAP
Legend
RIVER TAME
RIVER MERSEY
2007

STOCKPORT EMOTION MAP

CHRISTIAN NOLD & DANIELA BORASCHI

THE STOCKPORT EMOTION MAP

Whilst conventional maps show static architecture and exclude humans, this art project presents a vision of Stockport that represents the emotions, opinions and desires of local people. Over a period of two months in summer 2007, about 200 people took part in six public mapping events. This map collects together and shows the results of the two activities: Drawing Provocations & Emotion Mapping.

.. HOW TO READ THE MAP ..

It is important to notice that the whole of the map is orientated so that the River Mersey runs across the middle of the page, meaning that the top does not face North like most contemporary maps. This projection is based on historic maps of Stockport that placed the main focus on the river as a resource, source of identity and county boundary. This map follows the definition of older maps according to which the river Mersey does not start in Stockport but rather at the confluence of the river Goyt and Etherow. Curiously, modern North facing maps of Stockport appear to align with the M60 motorway in almost the same way. Looking at the overall pattern of the emotion pillars, it is possible to discern a number of highemotional arousal clusters. There are large clusters around the old market area and throughout the whole of Princes Street with smaller ones in Mersey Square and the Stockport Market area. In contrast, the Great Underbank and St. Petersgate areas are very calm. This pattern seems to correspond to the relative density of people and thus social interactions in those areas. It is also a reflection of the amount of visual distractions in those places. In addition to these broad patterns there are a number of individual high arousal spikes that seem to be caused by particular buildings like the brewery or by very personal contexts like an individual's annoyance at the graffiti on a medieval wall.

REFLECTIONS ON THE EMOTION MAP

Everyday we enter into discussions with people for different reasons. Sometimes, we have a particular purpose for communicating, but often we just want to talk to friends and strangers to hear their ideas and to express ourselves. The vast majority of these conversations quickly slip our mind and are never recorded because we think they are trivial.
Yet we live in a time when our opinions are valued very highly. Everyone from politicians to market researchers are fascinated by how we feel about particular issues. Curiously though, when we enter into discussions in those contexts, we tend to use a very strange stilted and alienated language, that neatly packages our ideas. In addition, these discussions tend to focus only on a single issue, for example the building of an incinerator rather than asking wider questions about how our society producesand disposes of goods. This map suggests a model for recording the apparently trivial conversations and events of our everyday lives and allows us to see them all simultaneously without being constrained to a narrowly defined topic. When it is possible to see this overview, these apparently disconnected conversations show their true value and form clusters of issues and concerns. Based on the process of talking to over 200 people in Stockport and analysing their drawings, we identified five overlapping issues of concern. Feel free to go to the project web site and download the Emotion Map data.

Here are the five issues that we identified for Stockport:

1. The marginalised history of Stockport
2. The hidden river Mersey
3. Monolithic shopping
4. Semi-Public Space
5. Isolation of young people

.. THE MARGINALISED HISTORY OF STOCKPORT ..

While Stockport prides itself as a historic town and many people drew the looming train viaduct as a landmark, the history of Stockport was not very strongly represented in people's drawings. When asked, most did not think that the past was influencing their everyday life in Stockport. Even amongst those that though it did affect them, some saw it as standing in the way of new developments. An example of this type of thinking is perhaps visible at the site of the Norman castle, then later cloth mill, which has today been turned into a very brash clothing shop. The nearby covered market which was reverentially named the 'Glass Umbrella', is today neglected and hardly frequented. This space appears to have the potential for a conversion into a cultural centre that could set an example for sensitively combining the past and the present.

.. THE HIDDEN RIVER MERSEY ..

The building of the Merseyway road in 1934 which covered the river seems to be a pivotal point for Stockport. Not only did it unite Stockport into one town, it also meant that all the old factories and mills that lined the banks had to be knocked down. This is the reason why there are few visible signs of are very Stockport's industrial heritage in the centre of town. The river which had been the basis for the town's founding, growth and identity was suddenly hidden away. Modern developments such as the cluster of supermarkets that block the river banks and allow only stolen glimpses exacerbate the problem. In fact, we found that the majority of young people that we talked to did not know that there was a river running below their feet. Most adults only had a vague idea about the course of the river and included it as a gostly trace on their mental maps.included it as a gostly trace on their mental maps. We suggest a whole range of cultural and physical interventions that could allow people to re-engage with the river, such as canoeing trips under the Merseyway or drilling spy-holes through the road surface to allow people to see and hear the Mersey.

.. MONOLITHIC SHOPPING ..

The main thread that ran through people's drawings and texts was the subject of shopping. When asked to draw the most important people in Stockport, whilst some drew their friends and family, a large number drew smiling consumers holding branded shopping bags. There is little doubt that the main factor responsible is the Merseyway shopping area, which dominates the centre of Stockport and defines its identity. As far back as 1978, not long after the shopping centre was built, a local newspaper already refered to Stockport simply as "our shop window town". While many peopleseemed content with the shopping area, a fair number felt that it was "seventies and outdated" and wanted more of a cafe street culture. Others expressed a worry that smaller, local shops were being forced out. Most of the shops that people drew were global brands and only a few sketched images of local shops or market stalls. Already in 1979, a local newspaper suggested that "...we cannot afford to loose the family-name businesses from Stockport" and that, "what is lacking is something to attract people there apart from the shops. There is no real focal point...".

.. SEMI – PUBLIC SPACE ..

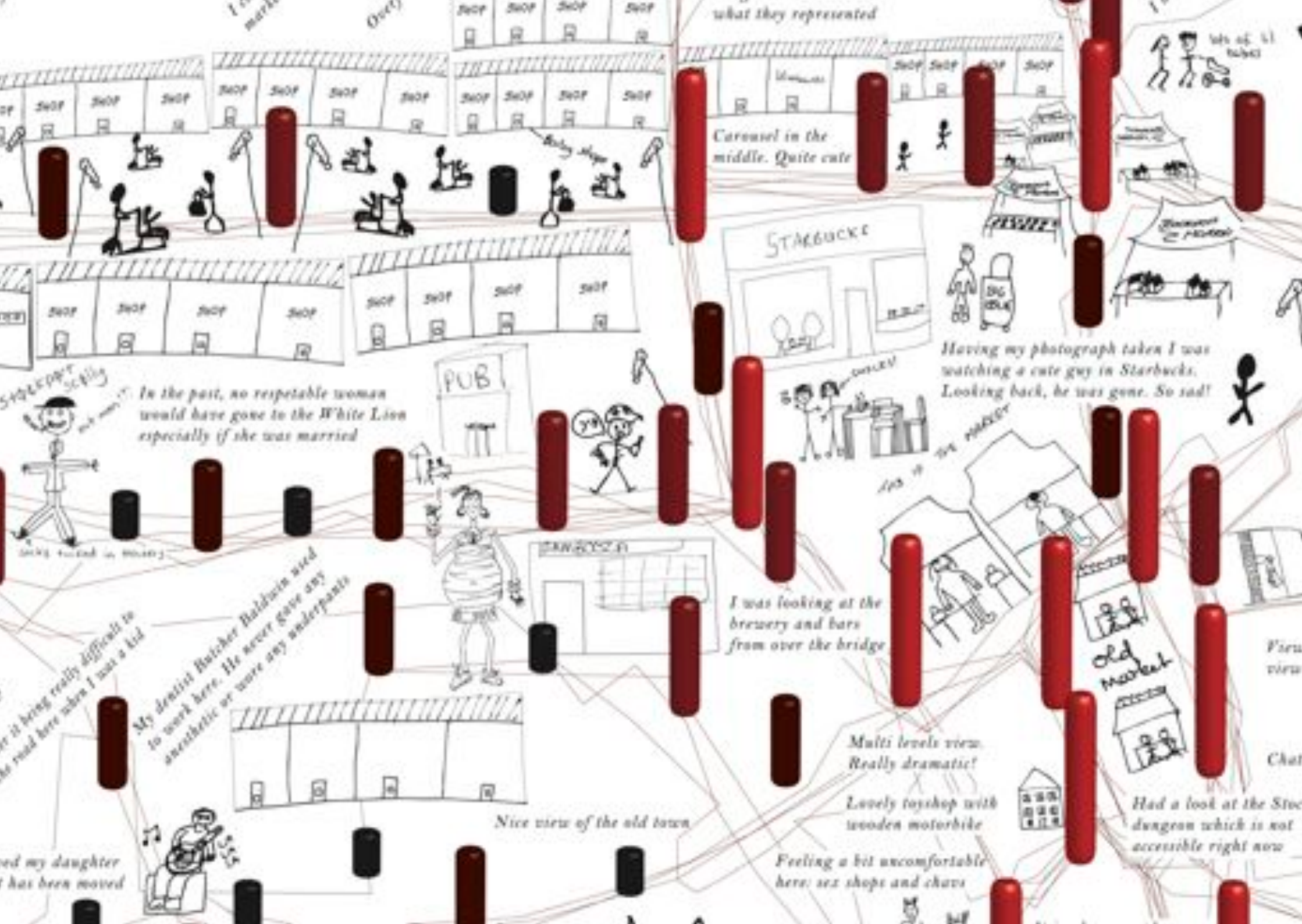
When talking to people it was surprising how few activities apart from shopping were mentioned. When asked about where they go to meet friends and relax, people drew images of corporate cafe chains and suggested that Stockport revolves around coffee. Walking around the town we noticed there is very little of what would be classically termed 'Public Space', i.e. places where there is no exclusion based on economic or social conditions. Most of the public life in Stockport seem to take place in semi-public spaces such as the shopping centre or cafes that require people to purchase or at least follow some behavioural rules to be allowed access. There are very few green spaces in the centre of Stockport that people can access without money and use as they like. On the whole there was a consensus that people wanted a less rigidly 'programmed' town centre.Current theorists of public space agree and argue for areas that allow multiple interpretations and uses. One example of a missed opportunity is the Bear Pit on Mersey Square which is shaped like an amphitheatre and was meant to be for public use. When one looks at the featureless concrete design and the fact that one has to cross a busy road, it is not surprising that no one uses it. This is perhaps even sadder considering that Mersey Square is the site of the original Village Green where in the past, large social festivals took place and circuses pulled in. It is illustrative to look at an artist's impression from the 1970's for the redevelopment of Mersey Square, picturing an idyllic green area full of trees and benches contrasting strongly with the desolate traffic heavy area that it is now. We feel that this area has a lot of potential and that it would be worthwhile revisiting older visions of this space and bringing them back to life.

.. ISOLATION OF YOUNG PEOPLE ..

Young people seem to be a particularly marginalised group in Stockport with very little provision for them. When asked, they mentioned the only thing set-up for them is a skate-park which they have to pay to enter. The council's youth provision also seems to be limited and focused on teenage pregnancy information. This lack of youth activities appears to increase the class division amongst the young people. Middle class teenagers seem to be invisible, while groups of working class teenagers are perceived to be the cause of anti-social behaviour including alcohol consumption, stealing and knife crime. We emphasise the importance of providing youth activities and services to bring the young people together and allow them to be included within the public life of Stockport.

.. SO WHERE DO WE GO FROM HERE ? ..

We hope that this map and text will stimulate personal reflections for people and then lead to a larger communal discussion that refines the issues of concern. Some of the topics we identfied could be tackled by single individuals such as running youth workshops, while others require a group of people and collaborations with institutions. It is heartening that 'friendly' was the most frequently used adjective for describing Stockport and we feel that this sense of community can nuture a new vision for the town.


what they represented
Carousel in the middle. Quite cute
STARBUCKS
Having my photograph taken I was watching a cute guy in Starbucks. Looking back, he was gone. So sad!
In the past, no respetable woman would have gone to the White Lion especially if the was married
PUB
My dentist Butcher Baldwin used to work here. He never gave any anesthetic or wore any underpants
I was looking at the brewery and bars from over the bridge
Multi levels view. Really dramatic!
Lovely toyshop with wooden motorbike
Feeling a bit uncomfortable here: sex shops and chavs
Nice view of the old town
Had a look at the Stoc dungeon which is not accessible right now
Old Market

BLANQUI'S PARADE

ROB VAN KRANENBURG

It was, as some Parisians later claimed, a perfect afternoon for a stroll in the Tuileries. Finally managing to escape the oppressive indoor drudgery to which they had been confined for so long, if not the whole of Paris, than certainly a specific political cross-section of the Parisians, welcomed this sunny January afternoon with a ferocity normally reserved for their traditional afternoon apéritif. The Jardin des Tuileries had always been, as it was to remain, a popular resort and few people could resist the temptation to walk past the Jeu de Paume towards the Place de la Concorde to go for a café at the Champs Elysées for although it was sunny, it was till bitterly cold. They could still gaze upon the Tuileries Palace, built by Catharina de Medici in the 16th century, it was not to survive the year 1871 when it was thoroughly plundered and destroyed by the Communards. But now it stood firm testimony to the power of Kings and Queens over their subjects. A monarchical power that was, in the shape of Napoleon III, making a desperate attempt to survive by transforming an authoritarian Empire into a liberal one, a tactical move, which, as we know, did not succeed and led to the proclamation of the Republic on September 4 1870. But to the people who strolled on the Champs-Elysées that fateful January afternoon this was still the Second Empire and they made no conscious connection between the amazing spectacle they were about to witness and the political earthquake that lay only a few months ahead.

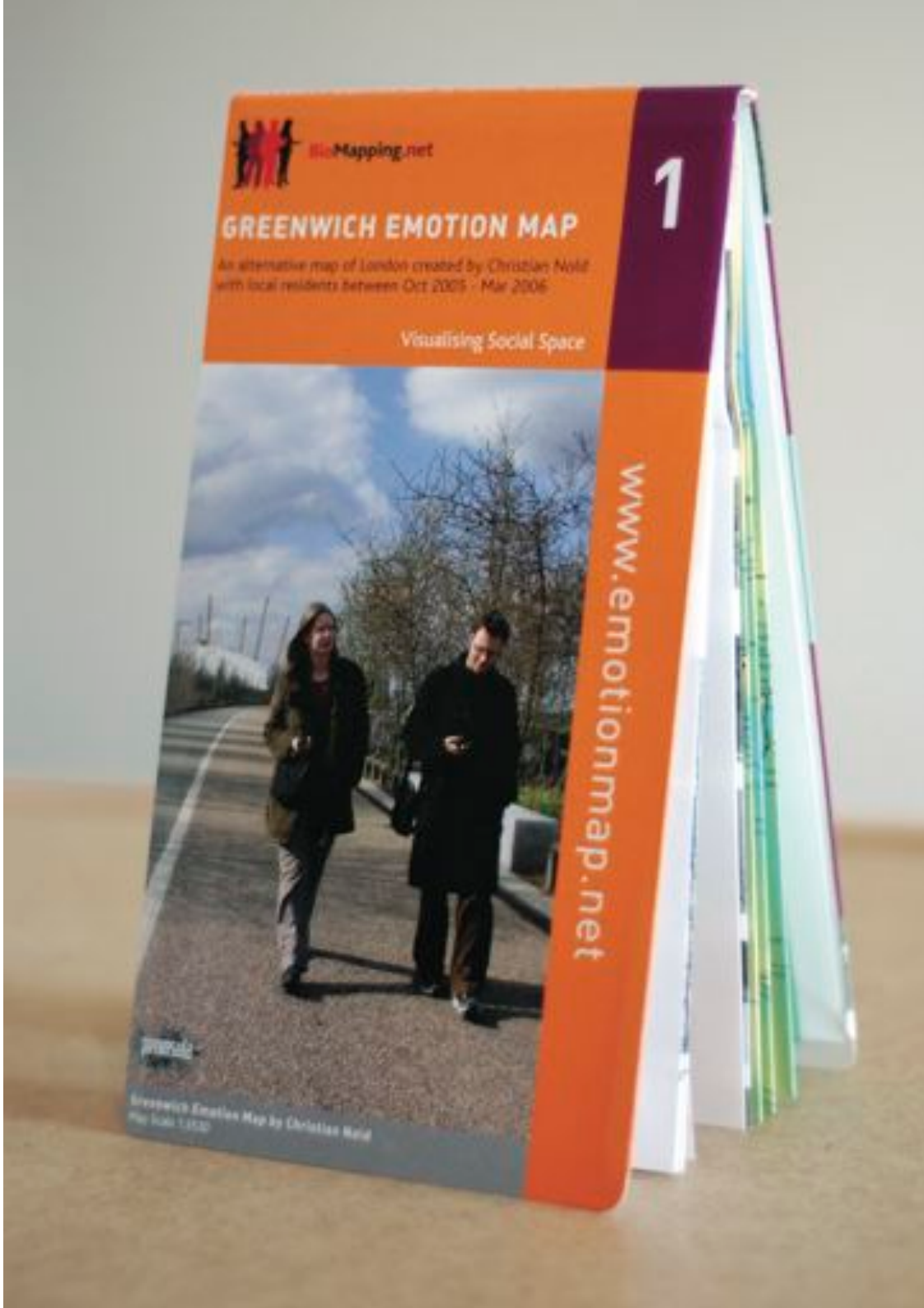
A few weeks earlier, on January 10 1870, Victor Noire, a journalist from the extreme republican newspaper La Lanterne, was killed by Pierre Bonaparte, the Emperor's cousin. This event profoundly disturbed the 'eternal' conspirator Blanqui whose revolutionary republican activism had earned him a wide range of dedicated followers. He suddenly realised that he only knew his lieutenants personally, and had never actually seen the men they commanded in his name. In effect, he did not even know their exact number. Desperately wanting to assess the strength of his troops personally, he contacted his aide-de-camp. The problem was obvious. They could not organise a parade of revolutionaries as if it were a regular military army. The solution, however, was equally obvious. You can hide a parade of revolutionaries in a parade of afternoon strollers. He said farewell to his sister, put a gun in his pocket and took up his post on the Champs-Elysées. There the parade of the troops of which he was the mysterious general would take place. He knew the officers, now he would see the men they led for the first time, marching past in proud display. Blanqui mustered his troops for inspection without anyone suspecting anything of what was actually happening. In the crowd that watched this curious display Blanqui stood leaning against a tree watching his friends silently approaching in columns. The promenade was momentarily transformed into a parade ground. In the very act of moving, walking men became marching soldiers. Marching soldiers only had to drop out of line back into the crowd to be transformed into walking men again and ultimately into afternoon strollers on a sunny January afternoon. The Blanqui parade dispersed as swiftly as it had emerged.
The unsuspecting onlookers were left with their bewilderment, in doubt as to what they had actually seen. They had witnessed a powerful manifestation of the existence of an another 'society' that had no institutional place in the political organisation of their time. The covert world represented by the Blanqui parade erupted for a brief moment in the overt world at a time and place when it was least expected. In that brief moment, its presence deliberately unmasked, the covert parade coexisted

alongside the overt promenade, and it is hard to tell which was the more real as the physical acts of strolling and marching seemed to blend into an harmonious simultaneity, thus revealing the frightening prospectthat they might be interchangeable. In the blurring of the boundaries between marching and walking we are made aware of how we are positioned within a field of vision and that we might able to construct meaning through experiencing the transgression itself. At the same time, however, experiencing the transgression strengthens our notions of the very acts themselves, we translate the momentary – the simultaneous blending – into our everyday notions of walking and marching. In the very moment that we gain the opportunity to make sense, we lose the opportunity to integrate it fully into our own ways of seeing.

ABOUT THE AUTHOR

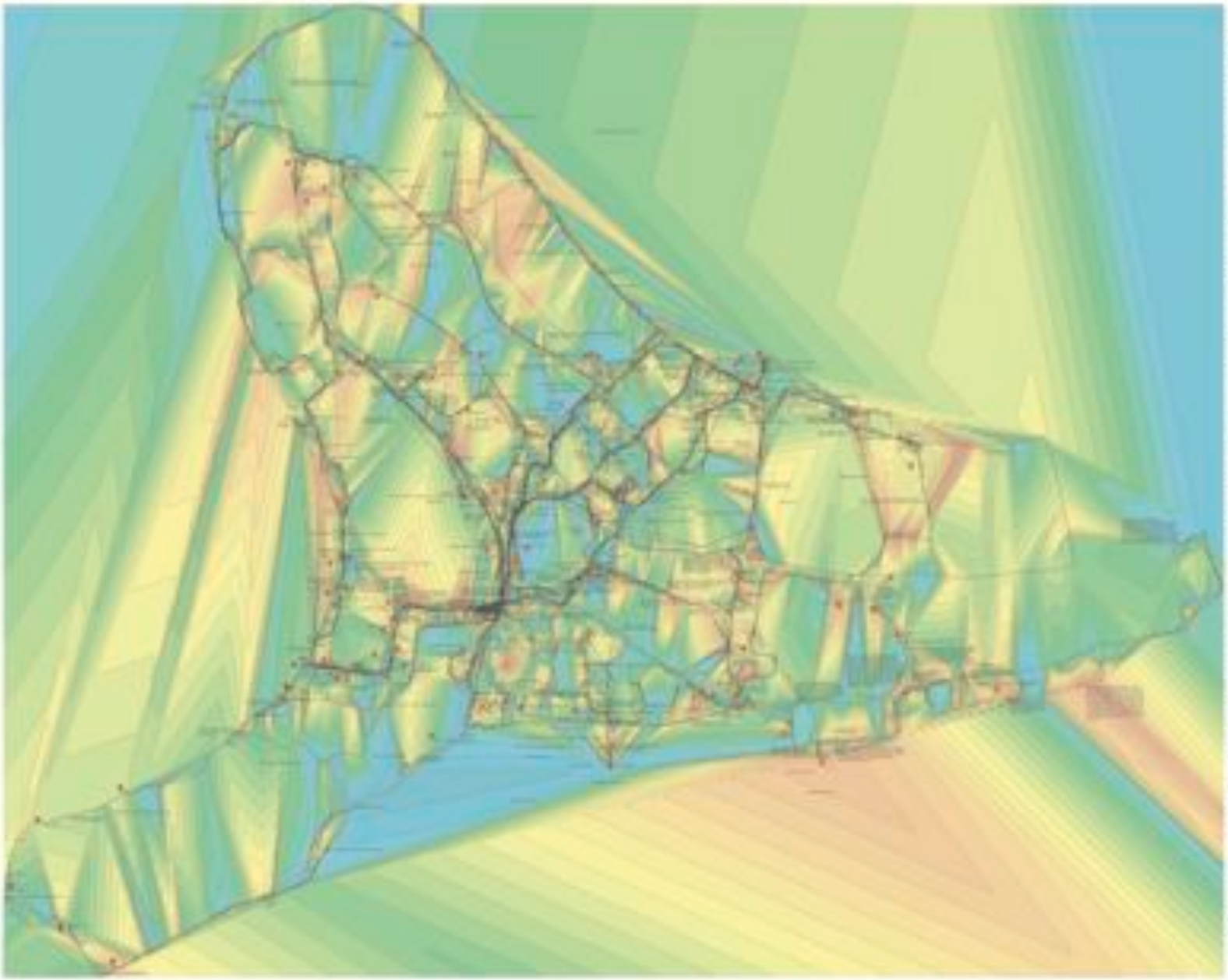
Rob van Kranenburg is an organiser, investigating the moments of emergence of new relationships between existing nodes.

The images on the next few pages are all from the Greenwich Emotion Map, 2005–2006. The images show multiple views of the final printed map.



GREENWICH EMOTION MAP by Christian Nold

October 2005 - March 2006



How was the Greenwich Emotion Map created?

What is the relationship between emotions and physical space?

How can you use this map?

Key

Participants

GREENWICH EMOTION MAP

by Christian Nold

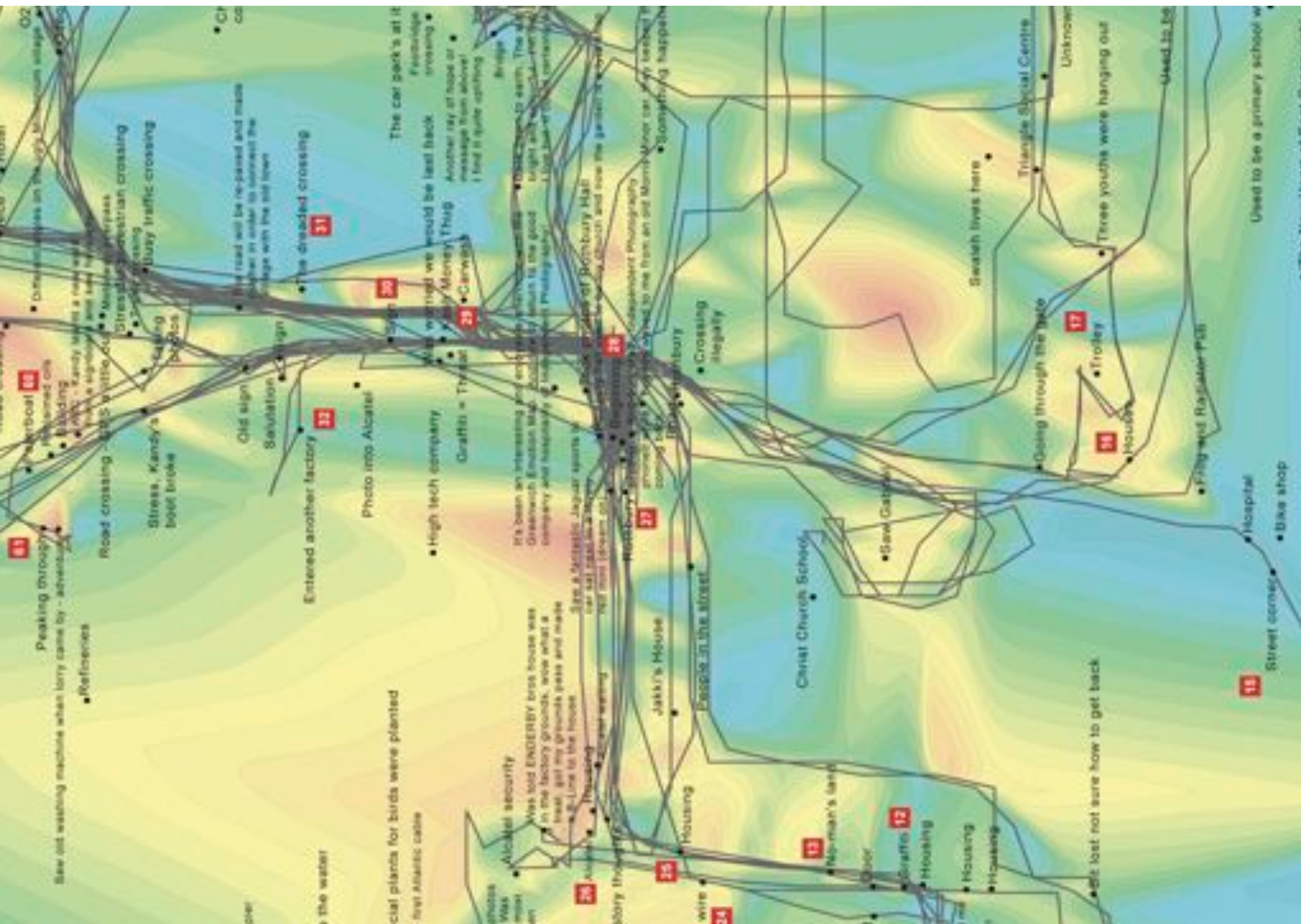
What is the relationship between emotions and physical space?

This question has been a concern of theorists from many disciplines but was perhaps most directly addressed by the Situationists in the late 1960s with their notion of psychogeography and their conceptual tool, the urban drift through the city. While these ideas are very interesting, the resulting maps tended to be disappointingly uncommunicative.

Drifting with the Bio Mapping equipment creates very different maps. The Greenwich Emotion Map, visible on the website and here in printed form, is a complex assembly of individual experiences at different perceptual levels that can be partially unravelled by the viewer. At a basic level, the map shows a sensory space of embodied experience where personal response appears to be caused by a variety of visual, auditory, taste and smell stimuli. At another level, we seem to see the effects of the built environment represented by traffic crossings and comments about particular local features. But perhaps most striking is the prominence of a third level: that of people's social interaction. This social space – whichmight be seen as ephemeral and temporary, including as it does surprise meetings with friends, neighbours and strangers – appears to be more important than the other levels. Rather than the continuous drifting through the city that the Situationists imagined, the Greenwich Emotion Map suggests an experience of the city as a series of distinct 'events', by which we mean moments of distinctive attention. The actual nature of these 'events' varies from meeting people, taking a photo, crossing roads, to being annoyed by one's surroundings. What these events have in common is an element of novelty which has caused the person's for events suggests an active engagement not covered by the normal concept of the 'walk' or 'drift'. It suggests an embodied being within the environment actively interacting with people, objects and places. Within this 'event space', a fork in the road causes a moment of indecision which competes for attention with the family argument taking place at the same time.

How was the Greenwich Emotion Map created?

All maps are a snapshot of a place at a specific moment. This is especially true of the Greenwich Emotion Map, which was created by local residents from the Greenwich Peninsula between October 2005 and March 2006. In a project organised by the local arts organisation Independent Photography, more than 50 Greenwich residents worked with the artist Christian Nold to create a new map of the area. Backed by a series of weekly groupworkshops, they individually or in pairs re-explored the local area with the aid of a Bio Mapping device. The Bio Mapping device was invented by the artist Christian Nold. It combines a finger cuff sensor, which records the wearer's Galvanic Skin Response (GSR) – an index of emotional response – in conjunction with a Global Positioning System (GPS) which locates the wearer's position on earth. The finger cuff sensor was derived from the Polygraph, where it is used by law enforcement agencies to identify the physiological symptoms of stress induced by lying. Bio Mapping uses this technology very differently. Instead of handing over one's own biometric data to an authority for judging, Bio Mapping empowers the participants to interpret their body's metrics in a more subtle way for themselves. From a common starting point the local area. On returning to the workshop base, they could see their walk represented visually as a personal 'emotion map'. The track shows the wearer's geographical location while the height indicates the intensity of physiological response at any particular point. The response can be positive or negative and requires active interpretation to make sense of it. In the workshops each participant studied their own track and then talked in the group about their 'emotion map' in relation to their experiences on the walk. As a result of this reflection, they would then add annotations to points along their track that they considered memorable or important. In this way more than 50 individual annotated tracks were gathered, combined and overlaid to create the communal Greenwich Emotion Map. On the map, the black lines show where all the participants walked. The most dense area near the centre of the map shows the starting point from which people chose to walk wherever they wanted. The coloured surface of the map represents the combined emotional data of all the participants. The contours connect points of individual response to form a communal skin that covers the entire map in a gradient of arousal. The intense red areas indicate hotspots of communal arousal, while the dark blue pools show areas of communal calm. People familiar with the area will recognise the outline of the Greenwich Peninsula but may be surprised that the contours fan out over the river Thames. This is not a map of geographical features but of emotions, which are triggered by many different stimuli including views of the river and beyond.


Triangle Social Centre
Three youths were hanging out
Sealink lives here
Going through the gate
Friday
Houses
Saw Castle
Hospital
Bike shop
Christ Church School
Crossing illegally
Entered another factory
Photo into Abarai
High tech company
Graffiti - Thrash
Old sign
Salutation
Road crossing
Refineries
Housing
Graffiti
Alcohol security
Jake's House
Eagle in the sheet
Housing
Housing
Housing
Housing
Graffiti
Choir
Newman's land
Housing
Housing
Housing
Housing

SOCIALLY ENGAGED ART: THE CONSCIENCE OF URBAN DEVELOPEMENT

SOPHIE HOPE

I strap a small device onto two fingers of my right hand. It is a 'Galvanic Skin Response sensor' that measures my emotions and is connected to a Global Positioning System so that I can measure my physiological reactions to the environment I am walking through. The peaks and troughs, on a resulting map record my arousal levels, feelings of excitement and indifference. The couple I am walking with live in the nearby Millennium Village. We are walking around East Greenwich, an area of London that has changed dramatically over the past 50 years and is due to morph again over the next twenty-five years into *"A new 1.4 million square metre master-planned community"* [1].

The Millennium Dome, now branded 'the O2', is being developed into an entertainment, music, sport and leisure attraction by the American company, Anschutz Entertainment Group. Just beyond the Dome, the old hospital in East Greenwich is being converted into housing by English Partnerships. It is a strange environment, a combination of desolate wasteland, manicured park lawns and regimented lines of perfectly pruned trees. I used to bus or walk through this dormant prime real estate on my way to the station everyday when I lived near here. Large white domed structures hide behind high blue fences where I used to imagine secret tests and inventions were taking place. Now, well-established trees and shrubs have grown through the old concrete of these abandoned car parks. As we walk around we discuss the changes in the area: the Beckham Football Academy; the active industrial buildings and factories; the first communications cable to be laid across the Atlantic and the progression of technologies since. Is this just like any other walk on a summer's afternoon? What is the significance of us mapping this walk? Who will use the data we are producing?

The experience I am describing was part of the Greenwich Emotion Map, a project by Christian Nold and one element of his ongoing Bio Mapping project. The final printed map includes the emotion data as well as images of the places visited by people on their walk, annotated with descriptions of their experiences. Christian was commissioned by Independent Photography (an arts organisation based in East Greenwich) as part of their programme Peninsula [2]. While Peninsula did not receive funding directly from the regeneration funds in the area, it was seen as a valuable asset to its development, as a member of the Greenwich Peninsula Partnership points out: *"The role of projects like Peninsula is to take the fear away from these changes by getting people involved in what's going on locally ... People don't like coming to meetings, it's a way of breaking down those barriers and giving people a voice... Independent Photography are like the conscience of the area, (a constant reminder that) it's not just about maximising profits – it's a really good way of ensuring that that conscience is always there..."*. I will use the Greenwich Emotion Map as an example of a publicly funded art project in order to sketch a wider context in which much art takes place in the UK today and explore the possible meaning of criticality for an art practice that is approved, supported and funded to aid social change.

THE CONTEXT

Socially engaged art practices are influenced by histories of activist, community, performance and conceptual art, all of which have challenged (to varying degrees of success) the notion of an institution of art based on individual production that remains at a critical distance from daily life. There are legacies of artists opening up their work to involve participants throughout the 20th Century. Artists have used people in the making of their own work, for example, when communities in Pasadena and Los Angeles built walls of ice for Allan Kaprow's Fluids happening (1967) or when 30 workers were hired by Santiago Serra who arranged them in a line according to their skin colour (2002). Artists have also tried to hand over authorship such as Yoko Ono in her instruction pieces (1961–2) or through the work of Tim Rollins and K.O.S. (1980's–now). Many projects that are considered 'socially engaged' today embody a variety of types of participation and complex networks of ownership (the same project may be at times participant–led and at others artist led). Indeed, this is carried over into cultural policy in the UK, which could be seen to be reliant on the somewhat contradictory notion of art as being something for everyone as long as it is judged as the produce of individual artistic genius.

Increasingly in the UK, people working in diverse aspects of contemporary urban society, from property developers to park wardens are turning to the arts for new ideas, regeneration, problem solving and community bridge building. The employment of artists in these (traditionally non–art) fields, where there are other issues and agendas at stake, is becoming the norm. Alongside the high profile, large–scale capital projects that emerged from the Lottery Act of 1993, there has been a spate of commissioned, community–based arts projects promoted as the road to urban renewal. These projects derive from New Labour cultural policy that has understood art and culture as central to making society better. According to a recent report by Ixia [3], approximately 61% of Local Authorities in England have public art policies linked to the local planning

system and increasingly other public sector and commercial organisations are commissioning public art, such as the commercial developers Land Securities. The evaluation of PROJECT [4] investigated the role of art in regeneration finding that: *"Public art was seen 'by some developers as bringing in to a scheme elements which give distinctiveness, character and identity, because these are indices of value and quality, and therefore add commercial value'. For others, public art was seen as a way of improving a development's chance of receiving planning permission and as a means of engaging local communities within the process of developing a regeneration project"* [5]. While the links between art and social inclusion remain, *" Social inclusion and the arts work together. DCMS aims to extend access to high quality arts. To achieve this, issues of social inclusion are at the heart of much that DCMS does "* [6], the recent McMaster report highlighted a shift in policy towards 'excellence' and 'judgement' of art over 'instrumentality' and 'monitoring'. The focus is back on the art rather than using art as a tool for social change: *"The driver must be not the achievement of simplistic targets, but an appreciation of the profound value of art and culture"*. Having said that, McMaster also asks that: *"Artists, practitioners and cultural organisations need to explore ways of communicating more effectively with their audience"* [7].

Despite this slight shift away from the instrumentalisation of culture, short–term arts programmes in deprived neighbourhoods continue to be endowed with the potential to reduce crime rates, build private/public sector partnerships, improve community relations and create new resources. These projects are based on the notion of the artist as an external agent, able to enter into a context with fresh eyes, offering ideas and solutions. When commissioned as part of regeneration schemes, a socially engaged art project can also become a lucrative marketing device to promote an area to potential businesses and buyers. Art is assumed to provide a positive transformation from bad to good, unbearable to bearable, socially excluded to included. This simplistic stance brushes over the complex, problematic relationships embedded in urban change in the

quest to create a glossy picture of participation and collaboration. Certain artists are now engaged in a serious and rigorous critique that reflexively approaches the role that cultural work has in creating the illusion of 'social inclusion' while actually increasing the division in wealth and poverty.

One of the loudest criticisms of this current situation (that shares some of the suggestions put forward by McMaster) lambastes the instrumentalisation of culture and calls for the reclamation and recognition of artistic autonomy. In their recent essay, Championing Artistic Autonomy, (2006) The Manifesto Club, for example, argue for artistic autonomy from *"physical, political and financial restraints" (in order for the artist to) "realise a creative vision"* [8]. The Manifesto Club was set up to *"challenge growing policy regulations, instrumentalism and market-based thinking, all of which contribute to a culture of restraint"*. My question is, how does this fight for autonomy relate to an art practice that disputes the status of singular authorship of the artist and seeks to go one step further than challenging this 'culture of restraint' by coming up with alternatives to effect change? Rather than react to the current climate in a way that reclaims artistic autonomy, I would argue there is a need to urgently review the politics of social engagement through art by re-examining the critical potential of a socially engaged art within this funded system of regeneration.

STRATEGIES OF CRITIQUE

In the next section of this essay I locate the critical aspects of the Geenwich Emotion Map along four co-ordinates of criticality. These four analyses are based on my interpretations of three descriptions of public art by Suzanne Lacy, Mark Hutchinson and Declan McGonagle (each of whom break down their descriptions into four positions, stages or dimensions) [9]. They are: **anthropology**, **reciprocity**, **co-production** and **(f) utility**. Rather than insist that one mode of working is better than any other, I conclude by insisting on a combined approach as demonstrated in the Greenwich Emotion Map.

ANTHROPOLOGY

This approach, takes as its model the anthropologist or 'participant observer'. By entering a community to investigate it, the artist collects readings, recordings and evidence and turns this into their own artwork which does not filter back into the community. The work is about a certain community rather than made with or for a certain community. This approach can be seen in State Britain by Mark Wallinger (2006), for example, where the work directly references Brian Haw's Parliament Square protest but did not involve him. This particular approach does not involve a critique of the anthropologist's (artist's) own position. The focus of attention is elsewhere, on the subject matter itself (for example, the issue of freedom of expression and civil liberties in the case of State Britain).

This approach prioritises a notion of artistic autonomy but does not focus on the artists own implicated role in both effecting and being effected by the community she/he enters. This way of working acknowledges the power relations between the professional, paid artist and unpaid subject and does not try to hide this fact. Indeed, this rejection and distancing from the everyday could be seen as a repost to the commonly adopted phrase

in current social and cultural plans and policies: the use of art. By extracting the issues away from the place they came from, the work is presented as having no direct use-value for those communities who supplied the source material. This is not necessarily a negative aspect and may indeed be a more honest approach than one that attempts co-production. We can see an element of anthropology in the Greenwich Emotion Map as Nold, coming from outside of that community, adopts the role of facilitator, providing the tools to gather information about a group of people that he then collates, designs and presents as an alternative map of the area. While the map is authored by Nold (his name appears on the front of the map), the numerous participants are acknowledged inside and indeed, the contents of the map is reliant upon them.

RECIPROCITY

This stage builds on the anthropological approach in that an artist demonstrates some kind of responsibility towards the community they are working with/on whilst retaining authorial control. Martha Rosler points out how some people prefer to let communities or participants author and lead projects (removing the artist-as-author from the centre of things) while others present any interaction or community liaison as a fictionalised representation (re-establishing authorial control). Rosler finds it hard to agree with either of these stances, preferring a more complex dynamic between people [10]. This could also be the case with the Greenwich Emotion Map. Nold incorporates other people's stories whilst mapping their emotions and creates a collective narrative of the area. During this stage, the artist becomes more self-critical of her/his own position but this ability or permission to be critical often remains limited information for the amusement of the artists only. This has been termed by Lefebvre as 'critical knowledge' [11] and refers to the idea that those with 'critical knowledge' are those who are 'in on the act'. Are the participants of Emotion Map

critically engaged with the tools and conceptual aims of the project or are they just using those tools without that bigger picture in mind?

'Critical Knowledge' that remains with the artist can sometimes be cringe-worthy to watch, for example in the film Czech Dream (2004), a series of posters advertised the opening of a new cheap hypermarket on the outskirts of Prague where, during the grand opening, the film makers Vít Klusák and Filip Remunda documented the disappointed faces of expectant shoppers as they ran towards its fake façade. In this instance, the film-makers have the upper hand and in the making of an interesting film, patronise the jubilant Czech shoppers looking for a bargain. The critical engagement remains the priviledge of the filmmakers and viewers of the film afterwards. It is hard to say who of those people who turned up to the staged opening had the 'critical knowledge' to reflect on how the project drew attention to the reactions to rapidly advancing capitalism in Eastern Europe, and how many were sucked into the prank and turned up to the opening of a new hypermarket they saw advertised to do their weekly shop. Maybe the 'critical knowledge' comes later, once you have calmed down and got over your embarrassment, shock or rage that comes with being fooled.

In a reciprocal arrangement, however, artists and participants are able to recognise (and exploit) the needs and expectations of each other. An artist may use people for the making of their own work while a participant may use the project for their own personal or financial gain. According to Nold, the Greenwich Emotion Map asks: *"How will our perceptions of our community and environment change when we become aware of our own and each others intimate body states?"*. One of the participants in the project expressed how as an older person she had not had much contact with technology and that the project made her aware of how this technology in the hands of the wrong people has different connotations. She talked about how easy it is for the powers that be, to know who you are, where you are and how you feel. This reflects Nold's intentions for the project in finding a new way of using this technology,

reclaiming it and devising alternative ways of mapping an area. According to another participant, however, the technology became redundant after their direct involvement in the initial mapping exercise and did not provide any 'conclusions or directions'.

This leads us to deduce that participation in an art project does not automatically result in the politicisation and activation of the participant and could even lead to further de-politicisation if conceived as a mirage of social inclusion rather than the real thing. Walter Benjamin in his essay, 'The Author as Producer' of 1934 describes how production *" is able first to induce other producers to produce, and second to put an improved apparatus at their disposal. And this apparatus is better the more consumers it is able to turn into producers, – that is, readers or spectators into collaborators "* [**12**]. This statement would perhaps ring true to many practising artists today as something that inspires them to develop projects, create platforms and facilitate collective production. It could also refer to New Labour policies of social inclusion and the rising trend of corporate social responsibility through which much socially engaged art is funded to build bridges with local communities. This top-down process of empowerment, however, has been heavily criticised by the communities of 'consumers' themselves, as being patronising and vacuous. Through the veil of social inclusion (often delivered through community consultation and socially engaged or public art) 'participants' experience the realities of regeneration such as increased control, privatisation of public space and rising house prices. Recognising the reciprocal nature of engaged art opens up the possibility of understanding the work in different terms that leave the artists intentions and integrity intact and unchallenged (if this is what the artist wants to achieve), while others take from it what they want.

CO-PRODUCTION

Moving on from recognising reciprocity, co-production involves participants becoming co-producers or co-authors, which further challenges the artist as sole author. In opening up the work to others for their input there is sometimes also a focus on an analysis and negotiation with the systems and structures that support the artistic process. This can be seen to some extent in the Battle of Orgreave (2001) for example, initiated by Jeremy Deller and filmed by Mike Figgis which was built on contributions and performances of those at the original battle on 18 June 1984 and re-enactors. The re-enactment and subsequent film screened on Channel 4 was a reminder of that day told predominantly by people who had lived it and for whom the repercussions are still being felt.
A tactic used in the Greenwich Emotion Map, was to engage those involved directly in regeneration decision-making processes as participants in the work itself. The Greenwich Emotion Map and other Peninsula projects, for example, have involved both local residents, politicians and developers in joint workshops. This way it is possible to question the values placed on art with a wider community of people allowing these values to be disrupted and challenged not just by artists but also by those involved in its production.

Working in the context of a comparatively prosperous publicly funded cultural sector (in relation to other countries), has meant the critical aspect of socially engaged art practice has had to shift a gear from direct action (to activate and empower individuals) to question the very nature and meaning of a socially inclusive agenda being applied to art. Rather than becoming the vehicle through which urban developers can market their social responsibility, do such projects as Emotion Map have the potential to demand a more thorough, democratic involvement of different people in the inevitable development of the 'master-planned community'?
This marks a shift in the focus of the critique to a questioning of the means of production, thereby unravelling the reason why the money is there

for the socially engaged art project in the first instance. The critique now involves a probing of the motivations of corporations and governments to empower and make producers of us all and questions the artists' role and position in carrying out these objectives.

The Greenwich Emotion Map does this by inviting people to question the nature of surveillance technologies by surveying and mapping their own movements through public spaces. It provides an alternative, multi-authored set of identities to the branded, slick and marketable identity of 'The Greenwich Peninsula' dreamt up by remote developers.

Equally, it could be seen to be paving the way for clever market research techniques to help companies decide which areas are 'emotionally productive' and therefore ideal advertising locations. To some participants the Greenwich Emotion Map is enticing people to take an active role in the changes in their area, to others it provides a diversion and illusion of participation. How does Emotion Map's usefulness to the developers of the Greenwich Peninsula balance with a collectively produced critique of the development of the Peninsula and how is that critique taken on board (or ignored) by the developers?

(F)UTILITY

This fourth approach incorporates elements of anthropology, reciprocity and co-production whilst becoming open for interpretation, redirection and transformation. The work takes off in all directions, each of which is equally significant. As we have seen, the Greenwich Emotion Map is schizophrenic in showing at times a useful community friendly face and at others a ruthless but all-important streak of irony (importantly – this latter aspect is developed by the 'participants' as well as the artist). By proposing models for activism, this fourth stage is analogous with Benjamin's apparatus for turning consumers into producers. The resulting Ordnance Survey-style Greenwich Emotion Map has the potential to become

an apparatus/tool for those involved to consider the implications of such a device. The official style of the map invites serious interaction while yielding surprising findings that you would not usually associate with a formal navigational tool. The map also demonstrates how map-readers can become the cartographers of their own environments.The participants became 'producers' in a process they would usually be the unwitting consumers of. The Greenwich Emotion Map attempts to incorporate a complex unearthing of social relations that make up the meaning and transformation of a place.

How is the map, the walk and the technology of the Greenwich Emotion Map used, adopted and manipulated ? There have been discussions locally about this technology being used to map the content of local meetings in order to adopt a visual mode of communicating key issues or concerns to other groups and decision-makers. The Senior Regeneration Manager at English Partnerships and one of the participants of Emotion Map project, thought the emotion topography was interesting and could see how this could translate back to a developer and to architects: *"You could be mindful of this when designing... (it might) take a bit of a leap for some developers and planners in order to justify it as a meaningful consultation exercise ... I came away thinking – that was a serious study in human behaviour ".*

Returning to Walter Benjamin, the Greenwich Emotion Map has the potential to be understood as an 'improved apparatus' [13], or a tool for turning consumers into producers that has introduced a shared, 'bottom-up' notion of production that acts as an alternative to more dominant processes of change and regeneration happening in the area. The future use of the technology and the maps will determine to what extent the users turn themselves into producers. There is often value placed on the useful and useless aspects of art depending on the context in which it is produced or presented. For example, in an art context, one might claim the useless aspect is of utmost importance, adding to the ambivalence and ambiguity of the work. When at a meeting with a group

of planners one might stress the function of the work and its ability to add economic and cultural value to an area. Both aspects are important in that they hide the useless element to those who like to see only the functional side and the useful aspect of the project to those who deem such claims to be unworthy of art. In the case of the Greenwich Emotion Map, 'uselessness' in terms of not providing a clear outcome or conclusion, is not necessarily a negative aspect.

As in the anthropological approach, it was the artist's intention to provide possibilities and questions rather than solutions and conclusions. Pointlessness and uselessness could be a valuable strategy of resistance in a society that demands productivity, outcomes and quantifiable results.

It could be argued that an art that ignores or hides its useful side is unable to be political and that an art that purely promotes its functionality looses out on being able to be critical. Do we then need to acknowledge and revel in both the useful and useless acts in order to claim the political and critical aspects of art ? It is the element of 'surprising functionality' that is significant here, that is, being useful in an unexpected way, rather than providing a useful service or carrying out a set of instructions. How can the Greenwich Emotion Map be useful in an unexpected way?
Emotion Map is not an obvious consultation exercise; on the one hand it evolves into a useful study and on the other it remains abstract and useful only for those taking part. For Emotion Map then, it is both the potential 'readability' and 'unreadability' that is important. The use-value remains the primary ownership of those taking part (the map-writers and readers) and the project resists co-option (due to its illegibility as an obvious piece of consultation) by those who wish to use it as a box-ticking tokenistic consultation exercise.

Political action lies in the possibility of finding something pragmatic in what appears to be absurd and to discover the absurd in the everyday. The critical potential of projects such as Emotion Map lies in the different (conflicting) directions experiences take and the ability for the people involved to respond and adapt to these influences and triggers.

By acknowledging that at times work will be artist-led and at others by participants, new opportunities to represent, reciprocate and co-produce emerge. This combined model of a critical socially engaged art that is funded to 'do a job' owes it to all involved that these triggers are unexpected.
By acknowledging and exploring these different uses, approaches and values, funding can be used to expose some of these contradictions in the process of regeneration. Furthermore, the Emotion Map demonstrates how such projects could reflect the conscience of regeneration and urban development back onto those who have outsourced it in the first place.

ABOUT THE AUTHOR

Sophie Hope is a PhD researcher, investigating the relationships between art and society through research, writing, teaching and listening.

NOTES

[**1**] Our Vision Greenwich Peninsula. Meridian Delta Limited.

[**2**] Peninsula was a series of six artists' commissions that involve local people in investigating the Greenwich Peninsula and its regeneration from 2005–7. The project received funding from Arts Council England, Heritage Lottery and City Parochial Foundation.

[**3**] Ixia (2007) *'Public Art and the Planning System and Process'*. Online at: *http://www.ixia-info.com/research/index.htm*

[**4**] Comedia (2006) *'PROJECT Evaluation Report'*. Online at: *http://www.publicartonline.org.uk/archive/project/evaluation/reports.php*

[**5**] Ixia (2007) *'Public Art and the Planning System and Process'*. Online at: *http://www.ixia-info.com/research/index.htm* {p. 10–11}.

[**6**] *http://www.culture.gov.uk/what_we_do/Arts/arts_and_communities/*

[**7**] Sir Brian McMaster (2008) *'Supporting Excellence in the Arts. From Measurment to Judgement'*.

[**8**] Artquest, December (2006).

[**9**] The four methods I explain here are interpretations of three other descriptions of socially engaged / new genre / public art by Suzanne Lacy.
– See *'Debated Territory: Toward a Critical Language for public Art'*. In S. Lacy (ed.) (1994) *'Mapping the Terrain'*. Seattle, Bay Press.
– See Mark Hutchinson (2002) *'Four Stages of Public Art'* {Third Text, Vol. 16, Issue 4 / p. 329–43}
– See Declan McGonagle (2007) in D. Butler and V. Reiss, (eds.) (2007) *'Art of Negotiation'*. Manchester, Cornerhouse {p. 6–9}
Each of their descriptions are also broken down into four positions, stages or dimensions.

[**10**] Rosler, M. (1994) *'Place, Position, Power, Politics'*, in C. Becker (ed.) *'The Subversive Imagination: The Artist, Society and Social Responsibility'*. London: Routledge {p. 72}.

[**11**] Lefebvre, H. (1947)(current edition 2006)*'Critique of Everyday Life: From Modernity to Modernism (Towards a Metaphilosophy of Daily Life.* Vol 3) .
London, Verso Books {p. 65}.

[**12–13**] Walter Benjamin (1934) *'The Author as Producer'*.

The image on this and the next few pages are all from the Brentford Biopsy, 2008. The images show multiple views of the 10 meter long printed banner map which was designed with the local participants which included the mayor, priest, historians and landscape architects.

Brentford Biopsy

April / June 2008 *Christian Nold with Daniela Boraschi*

Instead of taking tissue samples as one would from a human being, this project uses cultural probes to investigate the local social body and its unique ailments. Like eastern medicine, this project takes a holistic view of the body to look at the interconnections between problems to get a sense of the whole.

WHAT IS THIS ?

In some sense, this object in front of you is a public mirror on Brentford and the people who live there. It was created purely from the data, information and conversations about the area which were collected by roughly 200 local people. You will notice that the texts on the map are those of multiple voices often disagreeing with each other or speaking from different points of view, but always trying to make sense of their environment. Unlike a mirror which cleanly bounces light in order to reflect, the process of reflecting opinions and ideas is never simple or clean. This project is an art piece which brings a particular set of instruments and methods for exploring and visualising Brentford. While some of the instruments used to create this map, such as the pencil and the clipboard seem familiar to us, others like Emotion Mapping or Sensory Mapping are exotic. More important than the unusual instruments or visualisations is the fact that this project does not hold a particular local agenda. It does not filter the collected information in order to persuade people to implement or build something. In fact, its central aim is to hold up the complex network of local issues for all to see and reflect upon and not to attempt to untangle or resolve them. This will no doubt frustrate those people looking to this object for easily implementable action points. In fact, the best metaphor for this object is actually as a foreign language newspaper dedicated to reporting on Brentford. When looking at the newspaper we recognise a lot of words such as local landmarks and we can understand the photos and illustrations, yet there is a lot we are missing. We feel a sense of frustration at not being able to understand everything. Yet if we make the effort to grasp the logic behind it, we get amazing insights into Brentford.People might question why we are not using a 'normal' language for this map. Well we the artists, argue that as a public we actually have very few shared references or languages for how to talk about our social spaces. The language of mainstream consultations offers only the impersonal language of officialdom and tick boxes which reproduces the assumptions of those creating the questionnaires. What we need is a communal process of translating complicated objects like this map in front of you, in order to create an active process of disagreement and participation. Even by publicly disagreeing with each other we create social positions and relationships that generate a public sphere. Rather than asking for or offering action points for local change, we ought to accept the difficult process of dealing with differences and making our own translations.

WHO IS THIS FOR ?

This map is for anyone who cares about Brentford or who really ought to care about it. The hope is that all the Brentford stakeholders such as local people, interest groups, developers and the council will use this map to revitalise their discussions. In particular, we insist on the role of people's sensory and emotional experiences as an essential part of all political discussions. How each one of us 'feels' about each other and our environment is the foundation stone upon which any democratic decision making has to be based. To do this, we first have to enable people to focus more strongly on their own experiences, reflect and question them and then articulate and share them through a political process where their personal experiences are valued and not disregarded. The challenge that this map presents to all the local stake-holders is how to use this document productively and include it within the process of politics. It is this complexity and difficulty of how to situate the content of this map that should also give it a value and meaning for a wider audience who are interested in new ways to represent local and intra-local issues or ways to instigate local public spheres.

HOW TO READ THE MAP

The map has been structured into four interrelated sections that suggest a left to right narrative from the past towards the future, as well as a progression from the static and solid towards the fluid and malleable. Each section contains its own mini summary of the issues and discussions that emerged from that section. In addition to the sections, the map is divided into smaller graphical elements that visualise the results of the different participatory activities with local people. Each of these activities becomes a lens for looking at Brentford from a different angle.

OPEN DATA

www.publicbiopsy.net

1. Built Environment

History, Industry & Development

This section explores how the natural resources such as the river and ford, as well as Brentford's geographical position, shaped the early history of Brentford and led towards its heavy industrialisation with canals, trains lines and motorways. It also explores the later decline of this industrialisation which is still felt in Brentford and the way the relics from these earlier periods are now a strong part of its identity. The words 'historic' and 'friendly' were the two most frequently used adjectives to describe Brentford and yet there is a strong feeling that the historical remnants are not being sensitively handled. The issue of development and interventions in the built environment are hot and divisive topic that seems to be offering a massive potential to introduce a new town centre and to overcome the strong sense of neglection, isolation and dereliction (see Adjective Cloud and Sensory Mapping in Section 3) but it is also the source of fears about how the new will obliterate the old and destroy the local identity. These tensions reoccur in all the sections in subtle ways. Talking to local people there seemed to be a sense of pessimism about how much power they had to shape these decisions and feeling that these changes were happening without their involvement. Most people welcome development but there appears to be no choice over what sort of development they will get. The demand for a local developer of Brentford that lives and works in Brentford was a frequent one. The 'Brentford Towers' emerged as the main local landmark being drawn and painted and described by many people. The feelings about them were mixed with some describing them as a big mistake and the source of social problems, while for others the towers are home and a source of pride and identity.

2. People

Community, Class & Fictions

This section explores the human 'resources' of Brentford and the ways that local community is being conceptualised in Brentford. Overall along with 'historic', 'friendly' was the most frequently used word to describe Brentford. This impression of a 'homely', local community is backed up by anecdotes about people who have moved house a number of times but often just a few roads away. The issue of diversity and integration is a complex one with some very split opinions. The new developments that have already occurred appear to be having complex affects on the makeup of the local community. Issues such as gated communities and the building of small flats for investment rather than living are contentious topics. There is a perception of a new and wealthy group of people moving in who are London commuters and who are not involved with the local community. These people are also seen to be single people without children who are depriving the local community of its connections. In fact the lack of provision for young people emerged very strongly from the collected material. The issue of inequality and class tensions appeared strong from the material with people living in clearly segregated geographical areas with little social integration. These tensions and lack of integration seem to be strongly related to the lack of public space in Brentford (see Section 3).

3. Social Space

Sensory City: Roads vs. Public Space

This section explores how the built environment and people are affecting each other. In particular it starts from the people's sensory experience of Brentford to see how they are shaping our feelings and ideas of the social space around us. One of the clear issues is the town centre which during the Sensory Mapping activity was described as: "Guessing shops but feels somehow dead and boring. Rubbish is rolling around with the wind. Traffic in the background. Nothing much going on but feels like there should be." As we saw in Section 1, roads were fundamental to Brentford's development but have today led to a linear strip of town centre where few people walk (see Issue Network) and cars rush by causing pollution (see Adjective Cloud). This lack of public space where people can hang out and meet each other is clearly related to the sense of isolation and soullessness (see Adjective Cloud) and marginlisation of young people.
On the other hand we have a large number of very positive adjectives for the river area in Brentford being described as 'beautiful', 'green', 'watery' and 'photogenic'. This disconnection between the High Street and the river emerges very strongly and a number of possible solutions are proposed in Section 4.
A clear example of how our sensory perception are involved in politics is the issue of the old canal boats. For some people the sight, sounds and smells of these old boats evoke nervousness and disgust while for others they are beautiful, historic and the centre of their community. By being honest about our sensory perceptions, can we find a better basis for discussing these kind of contentious issues in Public Space?

4. Future Visions

Built Environment + People + Social Space = ?

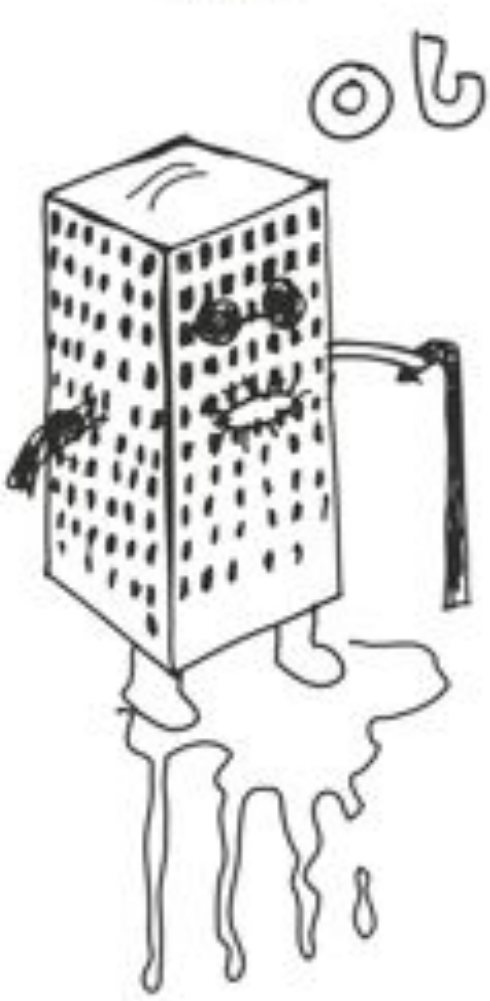
There is a sense that Brentford is a place which will change dramatically in the next few years. The direction of these changes are yet to be decided. A developer is in the process of drawing up a new masterplan for Brentford which will be going to public consultation in the near future. What type of future can we envisage? One of the dangers is always the spectre of 'realism' that breaks all imagination and delivers the cheapest and most banal solutions. We asked people to 'Draw or describe what Brentford might look like in the future?' and 'You have unlimited amount of money power and freedom to change Brentford. Draw what you would do to this place?'. The majority of the drawings suggested pragmatic spatial interventions such as severing the High Street and pedestrianising it. A very popular proposal was to increase the amount of green planting as well as alternative energy generation to create a self-sufficient Brentford. The challenge of global warming and rising water levels are the main fears that people are drawing which in some of the cases are so bad, that we need to get into our big boat or rocket and depart earth for another planet. There was a general sense of passivity to how Brentford's future might be shaped with only a few suggesting community solutions such as local artisans and entrepreneurs and a place 'where people stay all their lives to develop and grow'. This call for human scale and community lead development is a powerful one that should not be forgotten when the public consultation appears.

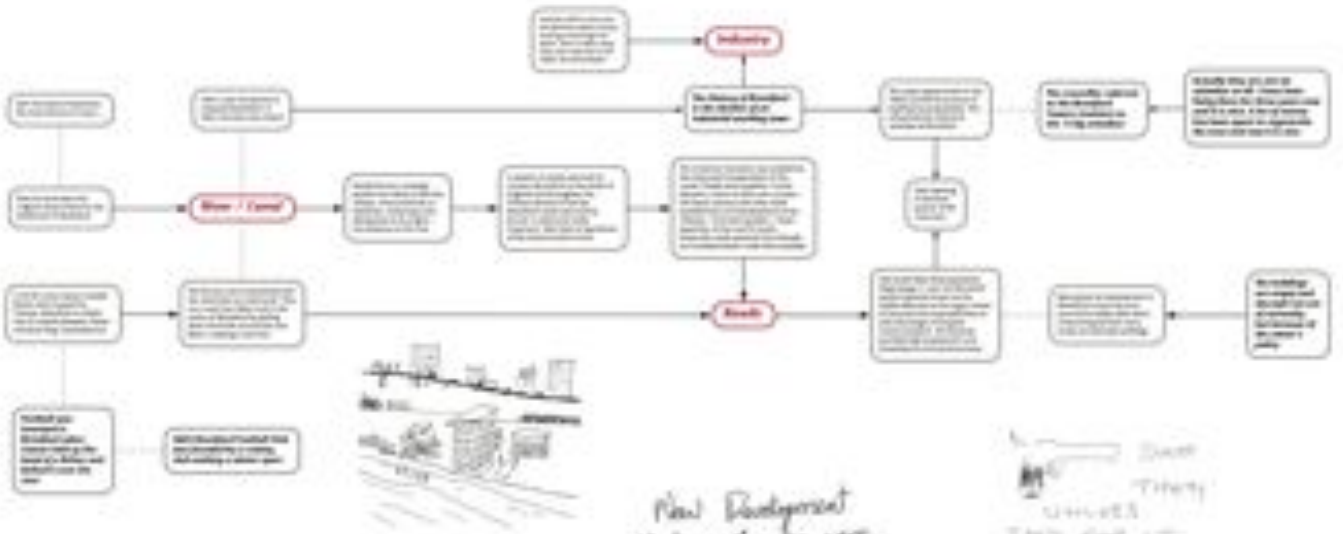
1. Built Environment

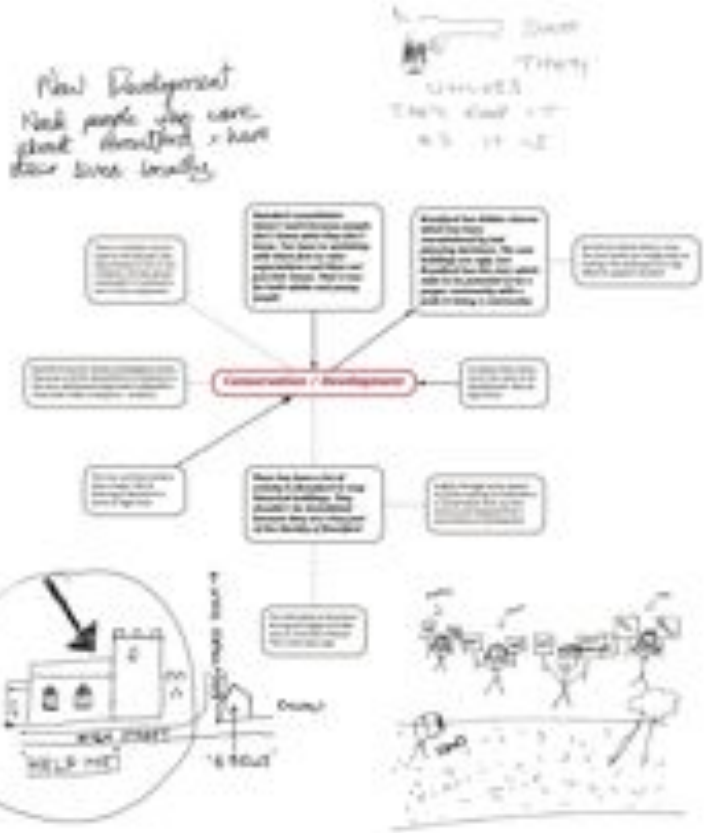
History, Industry & Development

historic traditional old

developing promising







HACKING OUR TOOLS FOR THOUGHT

DR. TOM STAFFORD

*"**Hack**: n. a clever solution to an interesting problem" .*
Motto of O'Reilly's Hacks Series

Hacking is what happens when you understand a system – you look for exploits, short-cuts and unintended uses. You subvert the design intention, reconfiguring things for your own purposes. Hacking is what a hacker does to understand a system. What does this do? What will happen if I do this? Hey, cool! Now what would happen if I do this?

Hacking is a DIY culture, a dissident, irreverent culture. Status is about kudos: what can you do ? Come and show us. Share. Show off. The hacker of the mainstream press is destructive, but always young, cool, capable. An anti-hero, in fact. Lots of hackers see it that way too. Destructive ? Well, maybe, but isn't the mainstream always going to see disruption of their agenda in that way?

Your mind is your thoughts and experiences, all the things you experience like your memories, hopes and feelings as well as all the processes going on below the surface that make conscious thought possible. Add to this the idea of hacking and we get 'mind hacking'. Mind hacking means looking beneath the user- illusion of consciousness

and getting at the underlying workings [**1**].

That sounds great doesn't it? What does it really mean? *'Mind Hacks'* is a book I wrote with Matt Webb in 2004 for the technical publishers O'Reilly. Matt is into technology and ideas, I'm into cognitive neuroscience. We drunk one too many cups of coffee and it seemed like a good idea at the time [**2**] . I think O'Reilly really had their eyes on something like *'Mind Performance Hacks'* (actually released 2006, but not written by us). We were thinking about liberating all the cool science that has been done recently uncovering the workings of the brain and mind. Science started out as a kind of open source – ideas published in journals so anyone can question them, use them, change them. We wanted to take the tips, the tricks, the discoveries of the sciences of the mind and package them in little bundles which people could experience, play with and repurpose (like programming functions). It was great. I spent six months trying to see how many arbitrary words I could remember using ancient Greek memory tricks, or see if I could catch myself moving my eyes in a mirror. My flatmates came home one day and I was standing on my head in the hall trying to work out if the picture I'd drawn looked like it was curving in or out of the screen. Both Matt and I became hyper-sensitive to the running of our own minds, the glitches in what we noticed, remembered, felt. I found out that things I'd noticed before had been given names by psychologists. That feeling when you say the word banana fifty times and you lose the feeling for what it means : "semantic satiation". I learnt concepts that made me notice things I'd never noticed before. Like the moment when the projector is off before a film comes on in the cinema, when the screen is dark, there's an illusion where the screen appears to grow without changing size. Look out for it, it's there I promise. So we wrote this book about moment-by-moment experience, about attention, awareness and memory. As well as liberating some scientific information into the mainstream, we also learnt a few things about our own minds along the way.

One thing the book relied on fairly explicitly was the idea of the mind as a bit of technology; a mechanism or set of mechanisms with

predictable input–output relations. This predictability means that we can try and infer operating principles, and then experiment with them. You can only take this metaphor so far. It is fairly clear that the mind isn't a mechanism in the old, hard, sense of machinery. If anything it is a mechanism in the software sense, something fluid and adaptive, dealing with the intangibility of information processing. Because mind is infoware, it becomes technology in the Arthur C Clarke sense – something that is sufficiently sophisticated to be indistinguishable from magic. Andy Clark has talked about how the mind is software for dealing with whatever the world throws at us [**3**]. By this I don't just mean that our brains learn to do smart stuff, I mean that our brains learn to take anything we can control and make it part of our cognitive ecosystem. We use external objects as mental tools naturally and compulsively. Our minds are plastic and extensible, so fundamentally embodied that the barrier between world and mind is leaky like a sieve. Andy Clark says that we are 'natural born cyborgs', born to become fundamentally integrated with whatever technology is available in external world.

You probably have a feeling for what this means already. When you use a well–designed bit of technology it becomes invisible – for example, if you drive you'll have noticed how the car becomes an extension of your thoughts; you forget about gears, pedals and the wheel in your hands and instead think of speed, acceleration and movement, just like you forget your muscles when you are running. If someone asks if you know the time you automatically say that you do, ignoring the fact that it is your watch that contains the information, not your memory. But you can access the information so easily that it feels like it is part of your mind.I bring up this idea of our extensible minds because I want to draw an analogy with Bio Mapping. The idea of mind hacking was based on the idea of our conscious experience being constructed by various component processes, but in our book we never really got to grips with the idea of extending the repertoire of components that construct our experience. Let me illustrate how important these components of mind can be by a story. Its not a story

about an extraordinary augmented human consciousness, but about an unfortunate individual who lacked the ordinary augmentation of memory which we normally take for granted.

In the book 'Broken Memories' [**4**] Margaret O'Conner and colleagues tell the story of an amnesic patient they've studied for over two decades. The patient, who they refer to by his initials, SS, has a kind of brain damage which means that he can't create new memories for things that happen to him, nor does he remember events in his personal history from before his accident (a viral infection that spread to the temporal lobe of his brain). Like other patients with this kind of amnesia, SS is stranded in the present. O'Conner describes how SS has kept the buoyant mood and outgoing personality that he had before his injury. He's intelligent and able to carry on a normal conversation – just as long as you don't expect him to remember anything beyond the sphere of the immediate conversation. He is completely dependent on his family and cannot work, and had been for two decades at the time of writing. When O'Conner and colleagues gave SS standard psychiatric tests for depression there was no evidence that he was unhappy [**5**]. When he was asked, for example, if he often felt miserable or hated himself or thought of suicide, SS consistently ticked the "No" boxes, reflecting his upbeat personality.

This isn't the end of the story, however. A second batch of tests was administered, which tested mood indirectly [**6**]. These tests didn't ask SS directly how he felt, but instead were designed to assess his personality traits and the themes which dominated his thoughts. These tests seemed to show that SS did have depressive feelings, even if he didn't articulate them in the first set of tests. O'Conner interpreted from the second tests that SS had low self–esteem, along with accompanying depression and anxiety, as well as a preoccupation with ideas of loss and decay.

So is SS depressed or not? O'Conner and colleagues asked themselves the same question, and in answering they drew on the distinction between expressive and experiential aspects of mood. SS seems to experience depression to a far higher degree than he expresses

it. But this isn't a case of simple deception. What is happening is that his memory problems, combined with his upbeat personality, seem to prevent him accessing these feelings regularly or consistently. The standard tests for depression, which rely on his own recognition of his feelings, suggest that he isn't depressed. Yet, the personality test which addresses mood indirectly allows SS's depressive feelings to come through. SS does have unhappy feelings, which is not surprising for someone in his position, but his injury prevents him achieving a stable conscious awareness of this fact. If SS had an intact memory for life's episodes it would become a tool for self-reflection, a repository for data about himself. He could use it to aggregate the fleeting evidence of his negative feelings. Instead, his upbeat personality dominates those nagging feelings, sweeping them away every time they occur – he is ignorant that each dismissal is not the first, but is in fact one of a countless succession of such sweepings-away.

For those of us lucky enough not to have amnesia, our episodic memories are a bit of mental technology which our consciousness can use; it'll help us remember where the shops are, what happened earlier in a film, as well as augmenting our ability to self-reflect and self-understand. Amnesic patients show that episodic memories are not a necessary component of the mind, they can be removed by injury. If the components of the mental operating system are modifiable, what other component have been, or could be, added into this kernel?

Like memory, language is another tool for thinking. Often it is only after I have said something out loud that I realise exactly what I think. Language is a tool, but it becomes so integral to ourselves that we think through it, with it, rather than having to struggle to construct sentences and pick words (this does happen, of course, but it is such an exception that it is notable when it does). By putting things into words we can express feelings, make ourselves remember things and see what we think about an idea. Just as the external world becomes part of the mind, we can make the internal world become external and hence use it as a vehicle for self-awareness. The point is that the distinction between mind, body and world isn't a firm

one. Language is part of the world, just as it is part of our minds. So too can writing, computers, maps or other people be part of our mind. As with language, all our tools are vehicles for self-awareness. Even physical tools like a hammer. As soon as you pick it up you ask yourself *"What can I hit with this?"*, which is encouraging us to ask ourselves *"What do I want to make or break with this?"*.

Bio Mapping is a tool for self-awareness, at once more ephemeral and more sophisticated than a hammer. By looking at your arousal as you traverse physical space you create a medium for reflection on your feelings, feelings which can normally pass below the radar of conscious awareness. Similarly, on a group level, when we can look at similarities in our emotional responses to physical spaces it lets us focus on shared feelings which, are normally only fleeting and not recorded, and so pass below the collective radar.

After we'd written the book we got a lot of interests from marketers (the people whose job it is to sell stuff, by fair means or foul). One story we were told was of someone who worked in PR walking round the O'Reilly ETech conference, waving the book and boasting about how they would use it to win hearts and minds. Someone asked me at a book reading if I was worried about giving all the secrets of the mind away to advertisers. I told them that the advertisers already had a perfected non-theoretical knowledge of how to manipulate people, and our book wasn't going to help them. I think it was true too – if you read the book you find that you're getting involved in relatively low-level stuff, like awareness and memory, rather than the higher level stuff of desires, fears and aspirations that advertisers work on.

But still, the reaction to the book was a message on the kind of culture we live in. We'd intended Mind Hacks to be for people like us, individuals, who liked understanding how stuff worked, and making things or improving things. Unfortunately this level of analysis also seemed to appeal to people who wanted to take advantage rather than just explore and improve.

It is here that Bio Mapping has the potential to be more radical than 'mind hacking' on it's own. If Mind Hacks aimed to show the mechanisms behind the construction of moment-by-moment conscious experience, then Bio Mapping can be a hack for a different level of consciousness – the self-consciousness that evolves over time, the interpersonal and ultimately social consciousness. The focus of Mind Hacks reflects a bias that exists in the whole of cognitive psychology. This is a bias towards the individual rather than the social; towards looking at the limits and resources of our mental apparatus rather than the potential; towards focussing on the fixed components of mind, rather than the dynamic and developing aspects. This bias has brought fantastic benefits, but it is still a limited view of mind. Our minds are exciting for their potential, not for their limits; they make sense in a social context, not on their own (this is quite literally true – left completely on your own for long enough you lose your sanity). Because our minds are fundamentally social, a complete understanding of them necessarily needs to reference social space.

If we get fooled into thinking that individual minds are the sole locus of thought (like cognitive science), or that technology should focus on individuals without reference to the social then our perception of the individual becomes severely handicapped. We're not just natural born cyborgs, but natural born social animals.

What's this got to do with hacking? Hacking is an idea, as well as a social movement, which is about subverting and reclaimin the tools and metaphors that we're given. Hacking is a DIY culture of action – a very individualistic community, but still a community with a vision of shared benefits. These are the guys that gave us open source after all. Community solutions are more than side-effects of the hacker ethic, they are core. If the idea of hacking becomes limited to the idea of personal solutions to individual problems then it will have failed. Bio Mapping promises to open up the field of possibilities for social hacking, for awareness hacking, for a rediscovery of conscious collective action – not along the lines of the monolithic political movements of the 20th century, but in swarms, collectives and communities. The hacker ethic is one with the possibility to combine individuality with interconnectedness [**7**].

Let's build.

ABOUT THE AUTHOR

Dr. Tom Stafford is a lecturer at the University of Sheffield. He likes finding things out and writing things down.

NOTES

[**1**] *'User-illusion of consciousness'*. See Dennet, D.C. (1991) *'Consciousness Explained'*. Little, Brown and Co.

[**2**] Actually Matt is a ferocious tea drinker, not a coffee-drinker.

[**3**] Clark, A. (2004) *'Natural Born Cyborgs: Minds, Technologies and the Future of Human Intelligence'*. Oxford, Oxford University Press.

[**4**] Campbell, R. and Conway, M.A. (ed.) (1995) *Broken Memories: Case Studies in Memory Impairment'*. Blackwell, Oxford UK.

[**5**] Standard neurpsychological depression measures: BDI = 3, HRSD = 4.

[**6**] The MMPI and the Rorschach test.

[**7**] Warnick B.R. (2004) *'Technological Metaphors and Moral Education: The Hacker Ethic and the Computational Experience'. Studies in Philosophy and Education, 23*, 4, 265-281 .

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WWW.SOFTHOOK.COM

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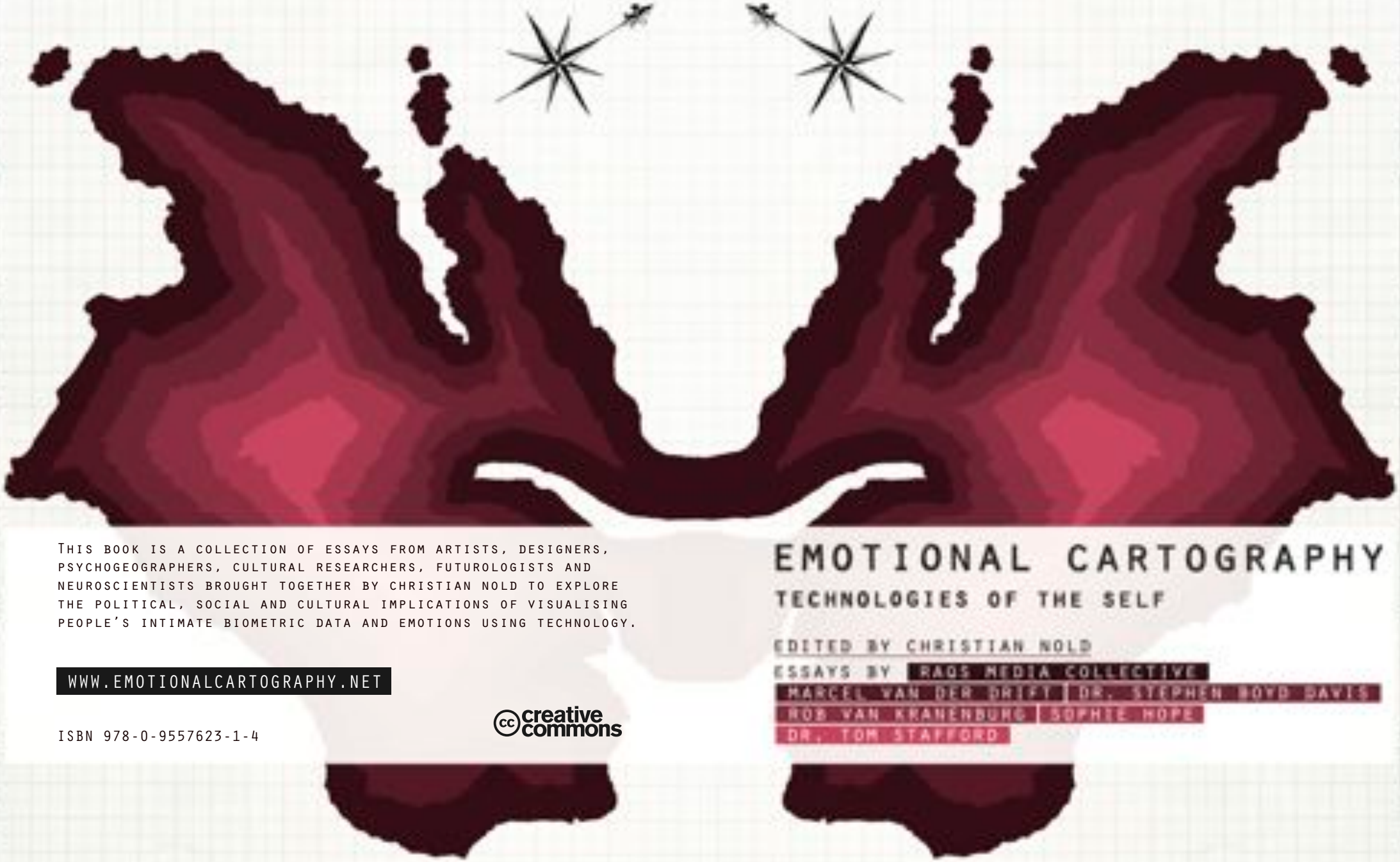

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